File in 1968 Folder

INDEX TO VOLUME 73, 1968

Journal of Geophysical Research

DUPLICATE

INDEX PRICE $1.00

PUBLISHED BY
THE AMERICAN GEOPHYSICAL UNION

SUBJECT AND AUTHOR INDEXES

for Volume 73 (1968)

DUPLICATE

James A. Peoples, Index Editor
University of Kansas, Lawrence, Kansas

The plan for the subject index of Volume 73 is little changed from that of Volume 72. A new major heading, Planetology, has been added, and a few subheadings have been added, revised, or deleted. In general, full titles are given. The plan for the author index is not significantly changed from that of the index for Volume 72.

I wish to thank Editors A. J. Dessler, O. L. Anderson, and their staffs for their cooperation and assistance. Authors have submitted a number of useful suggestions with their replies to our index questionnaire. Constructive suggestions from users of the index will be appreciated.

MAJOR HEADINGS OF THE SUBJECT INDEX

	Page
Solar Physics and Astrophysics	7721
Planetology	7721
Small Particles and Fields in Interplanetary Space	7724
Particles and Fields in the Earth's Magnetosphere	7726
Particles and Fields in the Ionosphere	7732
Aeronomy	7737
Meteorology	7740
Solid Terrestrial Surfaces	7743
Hydrology	7743
Oceanography	7743
Earth's Main Magnetic Field	7745
Geodesy and Gravity	7747
Geochemistry	7747
Mineralogy, Petrology, and Physical Properties of Rocks	7748
Volcanology	7750
Tectonophysics	7751
Seismology	7752
Information Related to Geologic Time	7754
Information Related to Geographic Regions	7755
General or Miscellaneous	7757
Corrections	7757

NOTES

The numbers following a citation are issue number and page number.
+ indicates papers for which there are two or more authors. Only the first author's name is given in the subject index.
[l] designates letters.
[d] designates a discussion of a previous paper.
[r] designates a reply to a discussion. The title for a discussion or a reply is usually the same as that for the original paper.
¢ indicates papers for which a correction appears in a later issue of Volume 73 or will appear in an early issue of Volume 74. Published corrections are cited (with the same titles as original papers) only under the heading 'Correction' in the subject index.

SUBJECT INDEX

Journal of Geophysical Research, Volume 73
January – December, 1968

SOLAR PHYSICS AND ASTROPHYSICS

Gosling, J.T. +	Satellite observations of interplanetary shock waves	1 43
Siscoe, G.L. +	Power spectra and discontinuities of interplanetary magnetic field	1 61
Saito, T. +	Solar cycle effects on geomagnetic Pi 2 pulsations	1 267
Cline, T.L. +	High-energy X rays from solar flare of July 7, 1966 *[l]*	1 434
Randhawa, J.S.	Mesospheric ozone measurements during a solar eclipse	2 493
Haymes, R.C. +	Upper limits to hard X-ray fluxes from Mars, Venus, and Jupiter	3 867
Fan, C.Y. +	Protons associated with centers of solar activity and their propagation in interplanetary field regions corotating with the sun	5 1555
Blum, R.	Synthetic model of magnetosphere boundary	7 2411
Ramaty, R.	Influence of ionized medium on synchroton emission of intermediate energy electrons	11 3573
Michel, F.C.	Mechanism for acceleration of electrons to relativistic energies	13 4135
Lockwood, J.A.	Cosmic-ray solar flare effect of January 28, 1967	13 4247
Freier, P.S. +	Singly and doubly charged particles in primary cosmic radiation	13 4261
Fisk, L.A. +	Effect of energy changes on solar cosmic rays *[l]*	13 4396
Dryer, M. +	Energy deposition in solar wind by flare-generated shock waves	15 4875
Alsmiller, R.G., Jr. +	Solar neutron transport in earth's atmosphere	15 4935
Hundhausen, A.J. +	Ionization state of interplanetary plasma	17 5485
Bame, S.J. +	Solar wind and magnetosheath observations during January 13-14, 1967, geomagnetic storm (ATS)	17 5761
Norton, R.B. +	Seasonal variation of molecular oxygen near 100 km *[l]*	17 5798
Feix, G.	Power spectra of solar radio bursts at microwavelengths	19 6249
Dolginov, S.S.	Early results from magnetic field experiments on lunar Explorer 35 *[d]*	19 6389
Ness, N.F.	Early results from magnetic field experiments on lunar Explorer 35 *[r]*	19 6390
Parker, E.N.	Role of stochastic fields in admitting low-energy galactic cosmic rays to solar system *[l]*	21 6842
Van Allen, J.A.	Corrected absolute flux of July 7, 1966, solar X-ray flare *[l]*	21 6863
Hollweg, J.V. +	Properties of solar wind turbulence deduced by radio astronomical measurements	23 7221
Burns, J.A. +	Charged particle in a spiral field	23 7377

PLANETOLOGY

INTERPLANETARY DUST

Bhandari, N. +	Cosmic dust in the stratosphere	5 1837
Peale, S.J.	Evidence against a geocentric contribution to zodiacal light	9 3025
Ferry, G.V. +	Study of thin-film penetration by micrometeroids on Gemini 9 and 12	9 3035
Matsushima, S.	Vertical distribution of dust to 30 km *[d]*	9 3085
Rosen, J.M.	Vertical distribution of dust to 30 km *[r]*	9 3088
Farlow, N.H.	Electron microscope studies of particles recovered from space	13 4363
Fechtig, H. +	Results of cosmic-dust collection on Luster 1965	16 5029
Lord, H.C.	Hydrogen and helium ion implantation into olivine and enstatite: Retention coefficients, saturation concentrations, and temperature-release profiles	16 5271
Jaffe, L.D.	Surveyor 6 lunar mission	16 5297
Blanchard, M.B. +	Particles on surfaces exposed to 1965 Leonid meteor shower by Luster sounding rocket	19 6347
Hodge, P.W. +	Studies of particles for extraterrestrial origin	24 7589

METEORITICS

Wetherill, G.W. +	Evaluation of the Apollo asteroids as sources of stone meteorites	2 635
Ross, H.P.	A simplified mathematical model for lunar crater erosion	4 1343
Meason, J.L. +	Heavy rare gases from Leighton chondrite *[l]*	6 2297
Ferry, G.V. +	Study of thin-film penetration by micrometeroids on Gemini 9 and 12	9 3035
Sabu, D.D. +	Fission xenon in chondrites	12 3957
Farlow, N.H.	Electron microscope studies of particles recovered from space	13 4363
Kruger, S.T. +	Cosmic-ray-produced hydrogen 3 and helium 3 in stony meteorites *[l]*	14 4784
Fechtig, H. +	Results of cosmic-dust collection on Luster 1965	16 5029
Rancitelli, L.A. +	Potassium: argon problem in iron meteorites	16 5429
Carter, N.L. +	Deformation of olivine in stony meteorites	16 5439
Fireman, E.L. +	Rare gases in phases of the Deelfontein meteorite	18 6111
Baldwin, R.B.	Inapplicability of Baldwin's relation for determining the causes of formation of lunar craters' *[d]*	18 6133
Blanchard, M.B. +	Particles on surfaces exposed to 1965 Leonid meteor shower by Luster sounding rocket	19 6347
Fisher, D.E. +	Frequency distribution of meteorite-earth collisions	20 6503

Keil, K.	Mineralogical and chemical relationships among enstatite chondrites	22 6945
Gopalan, K. +	Rubidium-strontium age of hypersthene (L) chondrites	22 7133
Hodge, P.W. +	Studies of particles for extraterrestrial origin	24 7589

COMETS

Danielsson, L.R. +	Laboratory simulation of plasma phenomena in comets	1 259
Cline, T.L. +	High-energy X rays from solar flare of July 7, 1966 *[i]*	1 434
Erickson, J.E.	Velocity distribution of sporadic photographic meteors	12 3721
Farlow, N.H.	Electron microscope studies of particles recovered from space	13 4363
Fisher, D.E. +	Frequency distribution of meteorite-earth collisions	20 6503
Hodge, P.W. +	Studies of particles for extraterrestrial origin	24 7589

TEKTITES

King, E.A., Jr.	Martha's Vineyard and selected Georgia tektites: New chemical data *[d]*	8 2835
Remo, J.L. +	A physical model for tektites of meteoritic origin	12 3727

GROSS PROPERTIES OF THE MOON (size, shape, gravity, and magnetic fields)

Ward, S.H. +	Electromagnetic reflection from a plane-layered lunar model	4 1355
Johnson, F.S. +	Lunar magnetosphere	5 1523
Michel, F.C.	Magnetic field structure behind the moon	5 1533
Blitzer, L.	Strength of synchronous rotation of the moon *[d]*	6 2304
Liu, Han-Shou	Strength of synchronous rotation of the moon *[r]*	6 2305
Ness, N.F. +	Perturbations of interplanetary magnetic field by lunar wake	11 3421
Mack, H. +	Density distribution of a steady-state, homogeneous moon *[i]*	12 3974
Gault, D.E. +	Lunar theory and processes	12 4115
Jaffe, L.D.	Surveyor 6 lunar mission	16 5297
Behannon, K.W.	Intrinsic magnetic properties of lunar body	23 7257

SURFACE (first km) OF MOON (mechanical properties, topography, albedo, etc.)

Beckmann, P.	Depolarization of electromagnetic waves backscattered from the lunar surface	2 649
Betinis, E.J.	Approximate backscatter of electromagnetic waves from an inhomogeneous lunar surface	2 657
Lachenbruch, A.H.	Proposed lunar heat flow measurement from a polar orbiting satellite *[d]*	2 822
Goetz, A.F.H.	Differential infrared lunar emission spectroscopy	4 1455
Staley, D.O.	Radiative enhancement of lunar hot spots during eclipse	6 2049
Krokosky, E.M. +	Strength characteristics of basalt rock in ultra-high vacuum	6 2237
Meloy, T. +	Size distribution of lunar surface materials *[i]*	6 2299
Sun, J.M.S.	Cometary impact origin of Copernicus	8 2721
Baldwin, R.B.	Rille pattern in the lunar crater Humboldt	10 3227
Nelson, J.D. +	Relative cleanliness as a measure of lunar soil strength	12 3747
Sienko, M.J. +	Darkening of selected metal oxides by hydrogen ion irradiation *[i]*	12 3972
Vrebalovich, T. +	Introduction: Surveyor 3 lunar landing	12 3981
Jaffe, L.D. +	Principal scientific results of the Surveyor 3 Mission	12 3983
Shoemaker, E.M. +	Television observations from Surveyor 3	12 3989
Scott, R.F. +	Soil mechanics surface sampler: Lunar surface tests, results, and analyses	12 4045
Christensen, E.M. +	Lunar surface mechanical properties at the landing site of Surveyor 3	12 4081
Lucas, J.W. +	Surveyor 3 results: Lunar temperatures and thermal characteristics	12 4095
Gault, D.E. +	Lunar theory and processes	12 4115
Sidran, M.	Thermoluminescence of the moon	16 5195
Quaide, W.L.	Thickness determinations of lunar surface layer from lunar impact craters	16 5247
Buhl, D. +	Reradiation and thermal emission from illuminated craters on the lunar surface	16 5281
Jaffe, L.D.	Surveyor 6 lunar mission	16 5297
Scott, R.F.	Density of lunar surface soil *[i]*	16 5469
Hunt, G.R.	Spectral features in the infrared emission from particulate surfaces	18 6039
Steinberg, G.S.	Inapplicability of Baldwin's relation for determining the causes of formation of lunar craters *[i]*	18 6125
de Wys, J.N.	Surveyor 6 magnet experiment	22 6915
Rea, D.G. +	Calculations of the effect of roughness on microwave emissivity with application to the moon and Venus	22 7009
Jaffe, L.D. +	Introduction: Surveyor 5 science results	22 7155
Jaffe, L.D. +	Principal science results from Surveyor 5	22 7165
Christensen, E.M. +	Lunar surface mechanical properties	22 7169
de Wys, J.N.	Magnet experiment: Electromagnetic properties of the lunar surface	22 7193
Lucas, J.W. +	Lunar surface temperatures and thermal characteristics	22 7209
Buhl, D. +	Anomalous cooling of a cratered lunar surface	24 7593
Tyler, G.L.	Oblique-scattering radar reflectivity of lunar surface	24 7609
Jackson, E.D. +	Chemical composition of the lunar surface at the Surveyor landing sites	24 7621
Jones, B.P.	Density-depth model for the lunar outermost layer	24 7631

INTERIOR OF MOON (tectonics, force fields, composition, etc.)

Goetz, A.F.H.	Differential infrared lunar emission spectroscopy	4 1455
Michel, F.C.	Magnetic field structure behind moon	5 1533
Lin, R.P.	Observations of lunar shadowing of energetic particles *[l]*	9 3066
England, A.W. +	Electrical conductivity of the moon	10 3219
Mack, H. +	Density distribution of a steady-state, homogeneous moon *[l]*	12 3974
Gault, D.E. +	Lunar theory and processes	12 4115
Dolginov, Sh. Sh.	Early results from magnetic field experiment on lunar Explorer 35 *[d]*	19 6389
Ness, N.F.	Early results from magnetic field experiment on lunar Explorer 35 *[d]*	19 6390
Sonett, C.P. +	The motional voltmeter: A method of distinction between a hot and cold moon based upon the solar wind-induced planetary dynamo current system *[l]*	20 6601
Behannon, K.W.	Intrinsic magnetic properties of lunar body	23 7257
Hollweg, J.V.	Interaction of solar wind with moon and formation of lunar limb shock wave	23 7269

GROSS PROPERTIES OF PLANETS

Van Allen, J.A. +	Observed absence of energetic electrons and protons near Venus *[l]*	1 421
Burns, J.A. +	Solar wind and planetary rotation *[d]*	13 4449

ATMOSPHERES OF PLANETS

Rea, D.G. +	On the composition of Venus clouds	2 665
Hunten, D.M.	Structure of lower atmosphere of Venus *[l]*	3 1093
McCord, T.B.	The loss of retrograde satellites in the solar system	4 1497
McElroy, M.B.	Upper atmosphere of Venus	5 1513
Phinney, R.A. +	Radio occultation method for studying planetary atmospheres	5 1819
Barth, C.A. +	Mariner 5 measurement of Lyman-alpha radiation near Venus *[l]*	7 2541
Harrington, J.V. +	Mars Mariner 4 radio occultation experiment *[l]*	9 3039
Emmanuel, C.B.	Radiative equilibrium temperature distribution of atmosphere of Mars	10 3213
Belton, M.J.S.	Abundance and temperature of CO_2 on Mars during 1967 opposition	15 4795
O'Conner, J.T.	Mineral stability at the Martian surface	16 5301
Pollack, J.B. +	The case for ice clouds on Venus	18 5943
Hansen, J.E. +	On the composition of the Venus clouds' *[d]*	18 6136
McGovern, W.E.	Exospheric temperatures of Jupiter and Saturn *[l]*	19 6361
McGovern, W.E.	Hydrogen content in upper atmosphere of Venus *[l]*	19 6364
Hodges, R.R., Jr. +	Lateral transport in planetary exospheres	23 7307
Kahle, A.B.	Intensity of radiation from Rayleigh-scattering atmosphere	23 7511

SURFACES OF PLANETS

Sagan, C. +	Elevation differences on Mars	4 1373
O'Conner, J.T.	Mineral stability at the Martian surface	16 5301
Hunt, G.R. +	Features in the infrared emission from particulate surfaces	18 6039
Rea, D.G. +	Calculations of the effect of roughness on microwave emissivity with application to the moon and Venus	22 7009

INTERIORS OF PLANETS

Sagan, C. +	Elevation differences on Mars	4 1373
Press, F.	Earth models obtained by Monte Carlo inversion	16 5223
Condie, K.C.	Possible role of water in the earth's thermal history *[l]*	16 5466

INSTRUMENTS AND TECHNIQUES

Haymes, R.C. +	Upper limits to hard X-ray fluxes from Mars, Venus, and Jupiter	3 867
Ross, H.P.	A simplified mathematical model for lunar crater erosion	4 1343
Ward, S.H. +	Electromagnetic reflection from a plane-layered lunar model	4 1355
Goetz, A.F.H.	Differential infrared lunar emission spectroscopy	4 1455
McCord, T.B.	The loss of retrograde satellites in the solar system	4 1497
Phinney, R.A. +	Radio occultation method for studying planetary atmospheres	5 1819
Vrebalovich, T. +	Introduction: Surveyor 3 lunar landing	12 3981
Jaffe, L.D. +	Principal scientific results of the Surveyor 3 mission	12 3983
Shoemaker, E.M. +	Television observations from Surveyor 3	12 3989
Scott, R.F. +	Soil mechanics surface sampler: Lunar surface tests, results, and analyses	12 4045
Lucas, J.W. +	Surveyor 3 results: Lunar temperatures and thermal characteristics	12 4095
Belton, M.J.S. +	Abundance and temperature of CO_2 on Mars during 1967 opposition	15 4795
Quaide, W.L. +	Thickness determinations of the lunar surface layer from lunar impact craters	16 5247
Jaffe, L.D.	Surveyor 6 lunar mission	16 5297
Sonett, C.P. +	The motional voltmeter: A method of distinction between a hot and cold moon based upon the solar wind-induced planetary dynamo current system *[l]*	20 6601
Rea, D.G. +	Calculations of the effect of roughness on microwave emissivity with application to the moon and Venus	22 7009

GENERAL OR MISCELLANEOUS

Wetherill, G.W. +	Evaluation of the Apollo asteroids as sources of stone meteorites	2 635
Peale, S.J.	Evidence against a geocentric contribution to zodiacal light	9 3025
Aronowitz, L. +	Contamination of lunar surface samples by the lunar module exhaust	10 3231
Shoemaker, E.M. +	Television observations from Surveyor 3	12 3989
Merifield, P.M. +	Sand waves and early earth-moon history	14 4767
Lord, H.C.	Hydrogen and helium ion implantation into olivine and enstatite: Retention coefficients, saturation concentrations, and temperature-release profiles	16 5271

SMALL PARTICLES AND FIELDS IN INTERPLANETARY SPACE

COSMIC RAYS

Nathan, K.V.S.K. +	Diffusion of solar cosmic rays and power spectrum of interplanetary magnetic field	1 163
Winge, C.R., Jr. +	Motion of charged particles in a spiral field	1 165
Keith, J.E. +	Cosmic-ray neutron monitor yield functions, gross transformation, and nucleonic component mean free paths	1 353
Fan, C.Y. +	Protons associated with centers of solar activity and their propagation in interplanetary magnetic field regions corotating with sun	5 1555
Durgaprasad, N.	Confinement of cosmic-ray nuclei in ionized source regions and interstellar medium ¢	5 1583
Gall, R. +	Arrival of low-energy cosmic rays via magnetospheric tail	5 1593
Anderson, H.R.	Radial gradient of cosmic radiation	9 2897
McCoy, J.E. +	Time variations in the interplanetary radiation intensity	9 2911
Lin, R.P.	Observations of lunar shadowing of energetic particles *[l]*	9 3066
Tanaka, S. +	Search for aluminum 26 induced by cosmic-ray muons in terrestrial rock	10 3303
Anderson, H.R. +	Background cosmic count increase associated with thunderstorms *[d]*	10 3340
Jokipii, J.R. +	Implications of small observed anistropy of 7.5- to 45-Mev cosmic rays	11 3367
Michel, F.C.	Mechanism for acceleration of electrons to relativistic energies	13 4135
McCracken, K.G. +	Interrelationship of cosmic-ray anistropies and interplanetary magnetic field	13 4159
Ormes, J.F. +	Proton and helium nuclei cosmic-ray spectra and modulations between 100 and 2000 mev/nucleon	13 4231
Lockwood, J.A.	Cosmic-ray solar flare effect of January 28, 1967	13 4247
Freier, P.S. +	Singly and doubly charged particles in primary cosmic radiation	13 4261
Shen, C.S. +	Solar modulation of galactic cosmic rays and its effect on meteorites	13 4273
Puri, R.K. +	Flux of primary helium nuclei near Hyderabad during 1965 *[l]*	13 4393
Fisk, L.A. +	Effect of energy changes on solar cosmic rays *[l]*	13 4396
Gall, R.	Daily variation of the asymptotic directions of cosmic rays *[l]*	13 4400
Bussian, A.E. +	Search for lunar effect on cosmic rays *[l]*	13 4404
Webber, W.R.	Diurnal variation of intensity and energy spectrum of low-energy electrons incident at Fort Churchill, Canada	15 4905
Thielheim, K.O. +	Prominent electromagnetic cascades in extensive air showers	15 5012
Jokipii, J.R. +	Cosmic-ray diffusion tensor and its variation	17 5495
Lanzerotti, L.J. +	Energetic electrons at 6.6 R_E during January 13-14, 1967, geomagnetic storm (ATS)	17 5751
Forman, M.A.	Implications of small radial anistropy observed in the 7.5- to 45-Mev cosmic rays *[l]*	17 5783
Lockwood, J.A. +	Cosmic-ray neutron flux measurements above atmosphere	21 6649
Parker, E.N.	Role of stochastic fields in admitting low-energy galactic cosmic rays to solar system *[l]*	21 6842
Jokipii, J.R.	Diffusion of solar cosmic rays and power spectrum of interplanetary magnetic field *[d]*	21 6864
Hatton, C.J. +	Barometric coefficients of multiplicities in neutron monitors	23 7503

COSMIC-RAY EFFECTS IN METEORITES AND TERRESTRIAL MATTER

Anderson, H.R. +	Background cosmic count increase associated with thunderstorms *[d]*	10 3340
Shen, C.S. +	Solar modulation of galactic cosmic rays and its effect on meteorites	13 4273
Fireman, E.L. +	Rare gases in phases of the Deelfontein meteorite	18 6111

ELECTROMAGNETIC RADIATION

Scarf, F.L. +	Ion cyclotron whistlers in solar wind	5 1747
Dowden, R.L.	Dotted pearl micropulsations	9 2995
Koehler, R.L.	Radio propagation measurements of pulsed plasma streams from sun	15 4883
Thielheim, K.O. +	Prominent electromagnetic cascades in extensive air showers	15 5012
Scarf, F.L. +	Pioneer 8 VLF electric field experiment	21 6665

SOLAR-WIND MAGNETIC FIELDS

Siscoe, G.L. +	Power spectra and discontinuities of interplanetary magnetic field	1 61
Nathan, K.V.S.K. +	Diffusion of solar cosmic rays and power spectrum of interplanetary magnetic field	1 163
Winge, C.R., Jr. +	Motion of charged particles in a spiral field	1 165
Johnson, F.S. +	Lunar magnetosphere	5 1523
Michel, F.C.	Magnetic field structure behind moon	5 1533
Scarf, F.L. +	Ion cyclotron whistlers in solar wind	5 1747
Anderson, H. R.	Radial gradient of cosmic radiation	9 2897
McCoy, J.E. +	Time variations in the interplanetary radiation intensity	9 2911

Siebert, M.	Magnetic activity differences between two hemispheres following the sector structure of the interplanetary magnetic field *[l]*	9 3049
Ness, N.F.	Magnetodynamically induced ambiguity in data from tilted, spinning fluxgate magnetometers *[d]*	9 3077
Fredricks, R.W. +	Magnetodynamically induced ambiguity in data from tilted, spinning fluxgate magnetometers *[r]*	9 3081
Jokipii, J.R. +	Implications of small observed anisotropy of 7.5- to 45-Mev cosmic rays	11 3367
Maguire, J.J. +	Effect of interplanetary field on energy of geomagnetic disturbances	11 3395
Ness, N.F. +	Perturbations of interplanetary magnetic field by lunar wake	11 3421
McCracken, K.G. +	Interrelationship of cosmic-ray anistropies and interplanetary magnetic field	13 4159
Ormes, J.F. +	Proton and helium nuclei cosmic-ray spectra and modulations between 100 and 2000 mev/nucleon	13 4231
Wolf, R.A.	Solar-wind flow behind moon	13 4281
Rostoker, G.	Relationship between onset of geomagnetic bay and configuration of interplanetary magnetic field *[l]*	13 4382
Lanzerotti, L.J.	Outer-zone electrons and interplanetary magnetic fields during two geomagnetic storms *[l]*	13 4388
Jokipii, J.R. +	Cosmic-ray diffusion tensor and its variation	17 5495
Nishida, A.	Coherence of geomagnetic *DP* 2 fluctuations with interplanetary magnetic variations	17 5549
Kennel, C.F. +	Thermal anistropies and electromagnetic instabilities in solar wind	19 6149
Fairfield, D.H.	Simultaneous measurements on three satellites and observation of geomagnetic tail at 1000 R_E	19 6179
Dolginov, Sh.Sh.	Early results from magnetic field experiment on lunar Explorer 35 *[d]*	19 6389
Ness, N.F.	Early results from magnetic field experiment on lunar Explorer 35 *[r]*	19 6390
Taylor, H.E. +	Measurements of perturbed-interplanetary magnetic field in lunar wake	21 6723
Ogilvie, K.W. +	Plasma observations on Explorer 34	21 6809
Wilcox, J.M.	Asymmetry in geomagnetic response to polarity of interplanetary magnetic field *[l]*	21 6835
Parker, E.N.	Role of stochastic fields in admitting low-energy galactic cosmic rays to solar system *[l]*	21 6842
Jokipii, J.R.	Diffusion of solar cosmic rays and power spectrum of interplanetary magnetic field *[d]*	21 6864

SOLAR-WIND ELECTRIC FIELDS

Winge, C.R., Jr. +	Motion of charged particles in a spiral field	1 165
Sienko, M.J. +	Darkening of selected metal oxides by hydrogen ion irradiation *[l]*	12 3972
Nishida, A.	Coherence of geomagnetic *DP* 2 fluctuations with interplanetary magnetic variations	17 5549
Kennel, C.F. +	Thermal anisotropies and electromagnetic instabilities in solar wind	19 6149
Scarf, F.L. +	Pioneer 8 VLF electric field experiment	21 6665

SOLAR-WIND INTERACTIONS WITH MOON AND PLANETS

Danielsson, L.R. +	Laboratory simulation of plasma phenomena in comets	1 259
Van Allen, J.A. +	Observed absence of energetic electrons and protons near Venus *[l]*	1 421
Haymes, R.C. +	Upper limits to hard X-ray fluxes from Mars, Venus, and Jupiter	3 867
Michel, F.C.	Magnetic field structure behind moon	5 1533
Tidman, D.A. +	Emission of plasma waves by earth's bow shock	5 1543
Ness, N.F. +	Perturbations of interplanetary magnetic field by lunar wake	11 3421
Wolf, R.A.	Solar-wind flow behind moon	13 4281
Burns, J.A. +	Solar wind and planetary rotation *[d]*	13 4449
Siscoe, G.L. +	Relation between geomagnetic sudden impulses and solar wind pressure changes	15 4869
Smit, G.R.	Oscillatory motion of nose region of magnetopause *[l]*	15 4990
Lord, H.C.	Hydrogen and helium ion implantation into olivine and enstatite: Retention coefficients, saturation concentrations, and temperature-release profiles	16 5271
Dolginov, Sh. Sh.	Early results from magnetic field experiment on lunar Explorer 35 *[d]*	19 6389
Ness, N.F.	Early results from magnetic field experiment on lunar Explorer 35 *[r]*	19 6390
Taylor, H.E. +	Measurements of perturbed-interplanetary magnetic field in lunar wake	21 6723
Mihalov, J.D. +	Cislunar geomagnetic tail gradient in 1967 *[l]*	21 6837
Hollweg, J.V.	Interaction of solar wind with moon and formation of lunar limb shock wave	23 7269
Michel, F.C.	Lunar wake at large distances	23 7277

SOLAR-WIND PLASMA

Gosling, J.T. +	Satellite observations of interplanetary shock waves	1 43
Nathan, K.V.S.K. +	Diffusion of solar cosmic rays and power spectrum of interplanetary magnetic field	1 163
Binsack, J.H. +	Simultaneous IMP 2 and OGO 1 observations of bow shock compression *[l]*	1 429
Scarf, F.L. +	Ion cyclotron whistlers in solar wind	5 1747
Swift, D.W.	Possible consequences of Akasofu's neutral hydrogen hypothesis *[l]*	5 1847
Stubbs, H.E.	Confinement of magnetic field by beam of ions *[d]*	7 2539
Parker, E.N.	Confinement of magnetic field by beam of ions *[r]*	7 2540
Dryer, M.	Hypothesis for absence of lunar bow and wake shock waves *[l]*	11 3583
Eather, R.H.	Interaction of neutral hydrogen and charged particles in radiation belts: Consequent Lyman-alpha emission *[d]*	11 3599
Kondo, Y. +	Interaction of neutral hydrogen and charged particles in radiation belts: Consequent Lyman-alpha emission *[r]*	11 3600
Ferraro, V.C.A. +	Confinement of magnetic field by beam of ions *[d]*	11 3605
Parker, E.N.	Confinement of magnetic field by beam of ions *[r]*	11 3607
Wolf, R.A.	Solar-wind flow behind the moon	13 4281
Siscoe, G.L. +	Relation between geomagnetic sudden impulses and solar wind pressure changes	15 4869
Dryer, M. +	Energy deposition in solar wind by flare-generated shock waves	15 4875
Koehler, R.L.	Radio propagation measurements of pulsed plasma streams from sun	15 4883
Smit, G.R.	Oscillatory motion of nose region of magnetopause *[l]*	15 4990
Montgomery, M.D. +	Solar wind electrons *[l]*	15 4999

Hundhausen, A.J. +	Ionization state of interplanetary plasma	17 5485
Bame, S.J. +	Solar wind and magnetosheath observations during January 13-14, 1967, geomagnetic storm (ATS)	17 5761
Asbridge, J.R. +	Outward flow of protons from earth's bow shock *[i]*	17 5777
Kennel, C.F. +	Thermal anisotropies and electromagnetic instabilities in solar wind	19 6149
Scarf, F.L. +	Pioneer 8 VLF electric field experiment	21 6665
Ogilvie, K.W. +	Plasma observations on Explorer 34	21 6809
Banks, P.M. +	Polar wind *[i]*	21 6846
Jokipii, J.R.	Diffusion of solar cosmic rays and power spectrum of interplanetary magnetic field *[d]*	21 6864
Hollweg, J.V. +	Properties of solar wind turbulence deduced by radio astronomical measurements	23 7221

SHOCK WAVES

Gosling, J.T. +	Satellite observations of interplanetary shock waves	1 43
Michel, F.C.	Magnetic field structure behind moon	5 1533
Spreiter, J.R. +	Comparison of temperature jumps across the earth's shock -- Vela 3 satellites and gasdynamic theory *[i]*	5 1851
Dryer, M.	Hypothesis for absence of lunar bow and wake shock waves *[i]*	11 3583
Wolf, R.A.	Solar-wind flow behind moon	13 4281
Dryer, M. +	Energy deposition insolar wind by flare-generated shock waves	15 4875
Smit, G.R.	Oscillatory motion of nose region of magnetopause *[i]*	15 4990
Bame, S.J. +	Solar wind and magnetosheath observations during January 13-14, 1967, geomagnetic storm (ATS)	17 5761
Abraham-Shrauner, B.	Conservation equations for weakly turbulent plasmas	19 6299
Hollweg, J.V.	Interaction of solar wind with moon and formation of lunar limb shock wave	23 7269
Fredricks, R.W. +	Magnetosonic wave propagating across magnetic field in warm collisionless plasma	23 7429

INSTRUMENTS AND TECHNIQUES

Keith, J.E. +	Cosmic-ray neutron monitor yield functions, gross transformation, and nucleonic component mean free paths	1 353
Eather, R.H.	Interaction of neutral hydrogen and charged particles in radiation belts: Consequent Lyman-alpha emission *[d]*	11 3599
Kondo, Y. +	Interaction of neutral hydrogen and charged particles in radiation belts: Consequent Lyman-alpha emission *[r]*	11 3600
Fechtig, H. +	Results of cosmic-dust collection on Luster 1965	16 5029
Blanchard, M.B. +	Particles on surfaces exposed to 1965 Leonid meteor shower by Luster sounding rocket	19 6347

GENERAL OR MISCELLANEOUS

Burns, J.A. +	Charged particle in spiral field	23 7377

PARTICLES AND FIELDS IN THE EARTH'S MAGNETOSPHERE

MAGNETOSPHERIC CONFIGURATION

Paulikas, G.A. +	Low-energy solar-cosmic-ray cutoffs: Diurnal variations and pitch-angle distributions	1 87
Stevenson, T.E. +	Particles incident on magnetic field gradients	1 175
Kavanagh, L.D., Jr.	Revised (B,L) coordinate system to allow for distention of magnetosphere by symmetric ring current	1 185
Dessler, A.J.	Magnetic merging in magnetospheric tail ¢	1 209
Behannon, K.W.	Mapping of earth's bow shock and magnetic tail	3 907
Mihalov, J.D. +	Configuration and reconnection of geomagnetic tail	3 943
Sonnerup, B.U.Ö. +	Explorer 12 observations of magnetopause current layer	5 1757
Blum, R.	Synthetic model of magnetosphere boundary	7 2411
Vasyliunas, V.M.	Low-energy electrons in evening sector of magnetosphere ¢	9 2839
Maguire, J.J. +	Effect of interplanetary field on energy of geomagnetic disturbances	11 3395
Alfvén, H.	Some properties of magnetospheric neutral surfaces *[i]*	13 4379
Gall, R.	Daily variation of the asymptotic directions of cosmic rays *[i]*	13 4400
Mayr, H.G. +	Model of magnetospheric temperature distribution	15 4851
Paulikas, G.A. +	Energetic electrons at synchronous altitude, 1. General features and diurnal variations	15 4915
Kavanagh, L.D. +	Plasma flow in magnetosphere	17 5511
Williams, D.J. +	Trapped electrons at low and high altitudes	17 5673
Opp, A.G.	Penetration of the magnetopause beyond 6.6 R_E during the magnetic storm of January 13-14, 1967: (ATS)	17 5697
Paulikas, G.A. +	Boundary of energetic electrons during January 13-14, 1967, magnetic storm (ATS)	17 5743
Russell, C.T. +	OGO 3 search coil magnetometer data (ATS)	17 5769
Hoffman, R.A. +	Ring current particle distribution derived from ring current magnetic field measurements	21 6711
Fritz, T.A.	High-latitude outer-zone boundary region for electrons during geomagnetically quiet periods	23 7245
Unti, T. +	Two-dimensional Chapman-Ferraro problem with neutral sheet	23 7319
Fairfield, D.H.	Average magnetic field configuration of outer magnetosphere	23 7329
Hones, E.W., Jr. +	Simultaneous observations of electrons at 2000 and at 100,000 km in magnetotail	23 7339

Vasyliunas, V.M.	Low-energy electrons on day side of magnetosphere *[l]*	23 7519
Macmahon, A.B.	Collisionless shock waves in high-beta plasmas *[d]*	23 7538
Kennel, C.F.	Collisionless shock waves in high-beta plasmas *[r]*	23 7539

BOW SHOCK WAVES

Greenstadt, E.W. +	Correlated magnetic field and plasma observations of earth's bow shock	1 51
Binsack, J.H. +	Simultaneous IMP 2 and OGO 1 observations of bow shock compression *[l]*	1 429
Behannon, K.W.	Mapping of earth's bow shock and magnetic tail	3 907
Tidman, D.A. +	Emission of plasma waves by earth's bow shock	5 1543
Spreiter, J.R. +	Comparison of temperature jumps across the earth's shock—Vela 3 satellites and gasdynamic theory *[l]*	5 1851
Anderson, K.A. +	Hydromagnetic disturbances of 3- to 15-minute period on magnetopause and their relation to bow shock spikes	7 2371
Anderson, K.A.	Energetic electrons of terrestrial origin upstream in solar wind	7 2387
Dryer, M.	Hypothesis for absence of lunar bow and wake shock waves *[l]*	11 3583
Russell, C.T. +	OGO 3 search coil magnetometer data (ATS)	17 5769
Burlaga, L.F. +	Observations of magnetosheath – solar wind boundary	19 6167
Abraham-Shrauner, B.	Conservation equations for weakly turbulent plasmas	19 6299
Fredricks, R.W. +	Magnetosonic wave propagating across magnetic field in warm collisionless plasma	23 7429

MAGNETOPAUSE

Sonnerup, B.U.Ö. +	Explorer 12 observations of magnetopause current layer	5 1757
Anderson, K.A. +	Hydromagnetic disturbances of 3- to 15-minute period on magnetopause and their relation to bow shock spikes	7 2371
Anderson, K.A.	Energetic electrons of terrestrial origin upstream in solar wind	7 2387
Blum, R.	Synthetic model of magnetosphere boundary	7 2411
Stubbs, H.E.	Confinement of magnetic field by beam of ions *[d]*	7 2539
Parker, E.N.	Confinement of magnetic field by beam of ions *[r]*	7 2540
Carpenter, D.L. +	Alouette 1 and 2 observations of abrupt changes in whistler rate and of VEF noise variations at the plasmapause; a satellite-ground study	9 2929
Hurley, J.P.	Boundary layer between warm, streaming plasma, and confined magnetic field *[d]*	11 3602
Lerche, I.	Boundary layer between warm, streaming plasma and confined magnetic field *[r]*	11 3602
Alfvén, H.	Some properties of magnetospheric neutral surfaces *[l]*	13 4379
Sen, A.K.	Validity of hydromagnetic approach in discussing instability of magnetospheric boundary *[d]*	15 5015
Lerche, I.	Validity of hydromagnetic approach in discussing instability of magnetospheric boundary *[r]*	15 5017
Eviatar, A. +	Transfer processes in magnetopause	17 5561
Cummings, W.D. +	Magnetic fields in magnetopause and vicinity at synchronous altitude (ATS)	17 5699
Freeman, J.W., Jr. +	Plasma flow directions at magnetopause on January 13 and 14, 1967 (ATS)	17 5719
Lezniak, T.W. +	Structure of magnetopause at 6.6 R_E in terms of 50- to 150-kev electrons (ATS)	17 5733
Paulikas, G.A. +	Boundary of energetic electrons during January 13-14, 1967, magnetic storm (ATS)	17 5743
Lanzerotti, L.J. +	Energetic electrons at 6.6 R_E during January 13-14, geomagnetic storm (ATS)	17 5751
Russell, C.T. +	OGO 3 search coil magnetometer data (ATS)	17 5769

MAGNETOSHEATH

Greenstadt, E.W. +	Correlated magnetic field and plasma observations of earth's bow shock	1 51
Jokipii, J.R.	Correlation of electron pulses and magnetic fields in magnetosheath and beyond	3 931
Ness, N.F.	Magnetodynamically induced ambiguity in data from tilted, spinning fluxgate magnetometers *[d]*	9 3077
Fredricks, R.W. +	Magnetodynamically induced ambiguity in data from tilted, spinning fluxgate magnetometers *[r]*	9 3081
Hurley, J.P.	Boundary layer between warm, streaming plasma, and confined magnetic field *[d]*	11 3602
Lerche, I.	Boundary layer between warm, streaming plasma and confined magnetic field *[r]*	11 3602
Eviatar, A. +	Transfer processes in magnetopause	17 5561
Cummings, W.D. +	Magnetic fields in magnetopause and vicinity at synchronous altitude (ATS)	17 5699
Lezniak, T.W. +	Structure of magnetopause at 6.6 R_E in terms of 50- to 150-kev electrons (ATS)	17 5733
Russell, C.T. +	OGO 3 search coil magnetometer data (ATS)	17 5769
Burlaga, L.F. +	Observations of magnetosheath – solar wind boundary	19 6167
Fairfield, D.H.	Simultaneous measurements on three satellites and observation of geomagnetic tail at 1000 R_E	19 6179
Ogilvie, K.W. +	Plasma observations on Explorer 34	21 6809

MAGNETIC TAIL

Paulikas, G.A. +	Low-energy solar-cosmic-ray cutoffs: Diurnal variations and pitch-angle distributions	1 87
Armstrong, T.P. +	Protons in magnetosphere and magnetotail	1 143
Dessler, A.J.	Magnetic merging in magnetospheric tail *[l]*	1 209
Montgomery, M.D.	Observations of electrons in earth's magnetotail	3 871
Murayama, T. +	Electrons within neutral sheet of magnetospheric tail	3 891
Behannon, K.W.	Mapping of earth's bow shock and magnetic tail	3 907
Mihalov, J.D. +	Configuration and reconnection of geomagnetic tail	3 943
Jorgensen, T.S.	Interpretation of auroral hiss in terms of incoherent Cerenkov radiation	3 1055
Speiser, T.W.	Uncoupling of parallel and perpindicular particle motion in neutral sheet *[l]*	3 1112
Gall, R. +	Arrival of low-energy cosmic rays via magnetospheric tail	5 1593

Lazarus, A.J. +	Plasma and magnetic field observations during magnetosphere passage of Pioneer 7	7 2399
Vasyliunas, V.M.	Low-energy electrons in evening sector of magnetosphere ¢	9 2839
Lin, R.P.	Observations of lunar shadowing of energetic particles *[l]*	9 3066
Patel, V.L.	Sudden impulses in geomagnetotail	11 3407
Hurley, J.P.	Boundary layer between warm, streaming plasma, and confined magnetic field *[d]*	11 3602
Lerche, I.	Boundary layer between warm, streaming plasma, and confined magnetic field *[r]*	11 3602
Fairfield, D.H.	Simultaneous measurements on three satellites and observation of geomagnetic tail at 1000 R_E	19 6179
Hones, E.W., Jr. +	Observed correlations between electron bursts in magnetotail and electron precipitation in auroral zone	19 6189
Sugiura, M. +	Propagation of sudden commencement of July 8, 1966, to the magnetotail	21 6699
Mihalov, J.D. +	Cislunar geomagnetic tail gradient in 1967 *[l]*	21 6837
Axford, W.I.	Polar wind and terrestrial helium budget *[l]*	21 6855
Behannon, K.W.	Intrinsic magnetic properties of lunar body	23 7257
Unti, T. +	Two-dimensional Chapman-Ferraro problem with neutral sheet	23 7319
Hones, E.W., Jr. +	Simultaneous observations of electrons at 2000 and 100,000 km in magnetotail	23 7339

INTERACTION BETWEEN SOLAR WIND AND MAGNETOSPHERE

Smith, R.L. +	Magnetospheric properties deduced from observations of ducted and nonducted whistlers	1 1
Gosling, J.T. +	Satellite observations of interplanetary shock waves	1 43
Greenstadt, E.W. +	Correlated magnetic field and plasma observations of earth's bow shock	1 51
Stevenson, T.E. +	Particles incident on magnetic field gradients	1 175
Dessler, A.J.	Magnetic merging in magnetospheric tail ¢	1 209
Van Allen, J.A. +	Observed absence of energetic electrons and protons near Venus *[l]*	1 421
Binsack, J.H. +	Simultaneous IMP 2 and OGO 1 observations of bow shock compression *[l]*	1 429
Lanzerotti, L.J.	Comparison of electron response in magnetosphere at L = 5 with solar wind (during the April 17-18, 1965, magnetic storm) *[l]*	1 438
Jokipii, J.R.	Correlation of electron pulses and magnetic fields in magnetosheath and beyond	3 931
Sharp, R.D. +	Some average properties of auroral electron precipitation as determined from satellite observations	3 969
Rosen, A. +	Temporal behavior of inner zone electrons, 1965-1966	3 1019
Speiser, T.W.	Uncoupling of parallel and perpendicular particle motion in neutral sheet *[l]*	3 1112
Tidman, D.A. +	Emission of plasma waves by earth's bow shock	5 1543
Sonnerup, B.U.Ö. +	Explorer 12 observations of magnetopause current layer	5 1757
Nishida, A.	Geomagnetic D_p2 fluctuations and associated magnetospheric phenomena	5 1795
Spreiter, J.R. +	Comparison of temperature jumps across the earth's shock—Vela 3 satellites and gasdynamic theory *[l]*	5 1851
Whalen, B.A. +	Direct measurement of auroral alpha particles	7 2307
Anderson, K.A. +	Hydromagnetic disturbances of 3- to 15-minute period on magnetopause and their relation to bow shock spikes	7 2371
Anderson, K.A.	Energetic electrons of terrestrial origin upstream in solar wind	7 2387
Blum, R.	Synthetic model of magnetosphere boundary	7 2411
Vasyliunas, V.M.	Crude estimate of relation between solar wind speed and magnetospheric electric field *[l]*	7 2529
Stubbs, H.E.	Confinement of magnetic field by beam of ions *[d]*	7 2539
Parker, E.N.	Confinement of magnetic field by beam of ions *[r]*	7 2540
Kavanagh, L.D.,Jr.	Empirical evaluation of radial diffusion coefficients for electrons of 50-100 kev from L = 4 to L = 7	9 2959
Siebert, M.	Magnetic activity differences between two hemispheres following the sector structure of the interplanetary magnetic fields *[l]*	9 3049
Ness, N.F.	Magnetodynamically induced ambiguity in the data from tilted, spinning fluxgate magnetometers *[d]*	9 3077
Fredricks, R.W. +	Magnetodynamically induced ambiguity in the data from tilted, spinning fluxgate magnetometers *[r]*	9 3081
Maguire, J.J. +	Effect of interplanetary field on energy of geomagnetic disturbances	11 3395
Patel, V.L.	Sudden impulses in geomagnetotail	11 3407
Maehlum, B.H.	Universal-time control of low-energy electron fluxes in polar regions	11 3459
Dryer, M.	Hypothesis for absence of lunar bow and wake shock waves *[l]*	11 3583
Eather, R.H.	Interaction of neutral hydrogen and charged particles in radiation belts: Consequent Lyman-alpha emission *[d]*	11 3599
Kondo, Y. +	Interaction of neutral hydrogen and charged particles in radiation belts: Consequent Lyman-alpha emission *[r]*	11 3600
Ferraro, V.C.A. +	Confinement of magnetic field by beam of ions *[d]*	11 3605
Parker, E.N.	Confinement of magnetic field by beam of ions *[r]*	11 3607
Reasoner, D.L. +	Detection of alpha particles in auroral phenomena	13 4185
Rostoker, G.	Macrostructure of geomagnetic bays	13 4217
Rostoker, G.	Relationship between onset of geomagnetic bay and configuration of interplanetary magnetic field *[l]*	13 4382
Lanzerotti, L.J.	Outer-zone electrons and interplanetary magnetic fields during two geomagnetic storms *[l]*	13 4388
Siscoe, G.L. +	Relation between geomagnetic sudden impulses and solar wind pressure changes	15 4869
Dryer, M. +	Energy deposition in solar wind by flare-generated shock waves	15 4875
Sen, A.K.	Validity of hydromagnetic approach in discussing instability of magnetospheric boundary *[d]*	15 5015
Lerche, I.	Validity of hydromagnetic approach in discussing instability of magnetospheric boundary *[r]*	15 5017
Birmingham, T.J. +	Identification of moving magnetic field lines	17 5505
Kavanagh, L.D.,Jr. +	Plasma flow in magnetosphere	17 5511
Nishida, A.	Coherence of geomagnetic *DP* 2 fluctuations with interplanetary magnetic variations	17 5549
Eviatar, A. +	Transfer processes in magnetopause	17 5561
Opp, A.G.	Penetration of the magnetopause beyond 6.6 R_E during the magnetic storm of January 13-14, 1967: (ATS)	17 5697
Lezniak, T.W. +	Structure of magnetopause at 6.6 R_E in terms of 50- to 150-kev electrons (ATS)	17 5733
Paulikas, G.A. +	Boundary of energetic electrons during January 13-14, 1967, magnetic storm (ATS)	17 5743
Bame, S.J. +	Solar wind and magnetosheath observations during January 13-14, 1967, geomagnetic storm (ATS)	17 5761
Russell, C.T. +	OGO 3 search coil magnetometer data (ATS)	17 5769
Asbridge, J.R. +	Outward flow of protons from earth's bow shock *[l]*	17 5777

Pfitzer, K.A. +	Large addition to electron inner radiation belt after solar flare event *[I]*	17 5792
Sugiura, M. +	Propagation of sudden commencement of July 8, 1966, to the magnetotail	21 6699
Ogilvie, K.W. +	Plasma observations on Explorer 34	21 6809
Wilcox, J.M.	Asymmetry in geomagnetic response to polarity of interplanetary magnetic field *[I]*	21 6835
McDiarmid, I.B. +	Dependence of high latitude electron boundary on orientation of geomagnetic axis	23 7237
Lincoln, J.V.	Geomagnetic and solar data	1 465
	3 1117; 5 1862; 7 2548; 9 3093; 11 3609; 13 4459; 15 5019; 17 5811; 19 6405; 21 6868; 23 7544	

MAGNETIC STORMS

Brown, W.L. +	Acceleration of trapped particles during a magnetic storm on April 18, 1965	1 153
Kavanagh, L.D., Jr.	Revised (B,L) coordinate system to allow for distention of the magnetosphere by a symmetric ring current	1 185
Owens, H.D. +	Electron omnidirectional intensity contours in earth's outer radiation zone at magnetic equator	1 199
Lanzerotti, L.J.	Comparison of electron response in magnetosphere at L = 5 with solar wind during the April 17-18, 1965 magnetic storm *[I]*	1 438
Behannon, K.W.	Mapping of earth's bow shock and magnetic tail	3 907
Olbert, S. +	Simple derivation of Dessler-Parker-Sckopke relation *[I]*	3 1115
Parks, G.K. +	Characteristics of modulated energetic electron precipitation ocurring during auroral substorms	5 1685
McPherron, R.L. +	Correlated magnetic micropulsations and electron precipitation ocurring during auroral substorms	5 1697
Coroniti, F.V. +	Concept of magnetospheric substorm and its relation to electron precipitation and micropulsations	5 1715
Bauer, S.J. +	Possible relationship between storm-time whistler cutoff and magnetospheric ring current *[I]*	5 1853
Yoshida, S. +	Ring current effects on cosmic rays	11 3377
Konradi, A.	Rapid increases in proton and electron fluxes in magnetosphere	11 3449
Lanzerotti, L.J.	Outer-zone electrons and interplanetary magnetic fields during two geomagnetic storms *[I]*	13 4388
Dryer, M. +	Energy deposition in solar wind by flare-generated shock waves	15 4875
Smith, L.B.	Strong thermospheric winds during geomagnetic storm	15 4959
Birmingham, T.J. +	Identification of moving magnetic field lines	17 5505
Swisher, R.L. +	Lifetimes for low-energy protons in outer radiation zone	17 5665
Williams, D.J. +	Trapped electrons at low and high altitudes	17 5673
Opp, A.G.	Penetration of magnetopause beyond 6.6 R_E during magnetic storm of January 13-14, 1967: (ATS)	17 5697
Cummings, W.D. +	Magnetic fields in magnetopause and vicinity at synchronous altitude (ATS)	17 5699
Paulikas, G.A. +	Boundary of energetic electrons during January 13-14, 1967, magnetic storm (ATS)	17 5743
Lanzerotti, L.J. +	Energetic electrons at 6.6 R_E during January 13-14, 1967, geomagnetic storm (ATS)	17 5751
Bame, S.J. +	Solar wind and magnetosheath observations during January 13-14, 1967 geomagnetic storm (ATS)	17 5761
Pfitzer, K.A. +	Large addition to electron inner radiation belt after solar flare event *[I]*	17 5792
DeWitt, R.N.	Polarization of auroral electrojet	19 6307
Thome, G.	Long-period waves generated in polar ionosphere during onset of magnetic storms	19 6319
Cummings, W.D. +	Magnetospheric substorms observed at synchronous orbit	21 6687
Hoffman, R.A. +	Ring current particle distributions derived from ring current magnetic field measurements	21 6711
Ogilvie, K.W. +	Plasma observations on Explorer 34	21 6809

SHORT-PERIOD (less than 1 day) VARIATIONS OF MAGNETIC FIELD

Brown, W.L. +	Acceleration of trapped particles during a magnetic storm on April 18, 1965	1 153
Saito, T. +	Solar cycle effects on geomagnetic Pi 2 pulsations	1 267
Nishida, A.	Geomagnetic D_p 2 fluctuations and associated magnetospheric phenomena	5 1795
Annexstad, J.O. +	Characteristics of Pg micropulsations at conjugate points	5 1805
Davidson, M.J. +	Spatial coherence of geomagnetic rapid variations	6 2143
Anderson, K.A. +	Hydromagnetic disturbances of 3- to 15-minute period on magnetopause and their relation to bow shock spikes	7 2371
Lazarus, A.J. +	Plasma and magnetic field observations during magnetosphere passage of Pioneer 7	7 2399
Morrison, H.F. +	Analysis of earth impedances using magnetotelluric fields	8 2769
Dowden, R.L.	Dotted pearl micropulsations	9 2995
Siebert, M.	Magnetic activity differences between two hemispheres following sector structure of interplanetary magnetic field *[I]*	9 3049
Annexstad, J.O. +	Pc 1 fine structure phase shift at high-latitude conjugate points *[I]*	9 3063
Manchester, R.N.	Correlation of Pc 1 micropulsations at spaced stations ¢	11 3549
Rostoker, G.	Macrostructure of geomagnetic bays	13 4217
Rostoker, G.	Relationship between onset of geomagnetic bay and configuration of interplanetary magnetic field *[I]*	13 4382
Nishida, A.	Coherence of geomagnetic DP 2 fluctuations with interplanetary magnetic variations	17 5549
Lezniak, T.W. +	Structure of magnetopause at 6.6 R_E in terms of 50- to 150-kev electrons (ATS)	17 5733
Cummings, W.D. +	Magnetospheric substorms observed at synchronous orbit	21 6687
Sugiura, M. +	Propagation of sudden commencement of July 8, 1966, to the magnetotail	21 6699
Kenney, J.F. +	Magnetospheric parameters determined from structured micropulsations	21 6737
Unti, T. +	Two-dimensional Chapman-Ferraro problem with neutral sheet	23 7319
Wilhelm, K.	Occurrences of Pc 1 pulsations in magnetospheric substorms	23 7491

ELECTRIC FIELDS

Mende, S.B.	Electric fields parallel to magnetic field in auroral ionosphere	3 991
Speiser, T.W.	Uncoupling of parallel and perpindicular particle motion in neutral sheet *[I]*	3 1112

Reid, G.C.	Formation of small-scale irregularities in ionosphere	5 1627
Scarf, F.L. +	Detection of electromagnetic and electrostatic waves on OV3-3	5 1723
Nishida, A.	Geomagnetic D_p 2 fluctuations and associated magnetospheric phenomena	5 1795
Evans, D.S.	Observations of near monoenergetic flux of auroral electrons	7 2315
Vasyliunas, V.M.	Crude estimate of relation between solar wind speed and magnetospheric electric field *[l]*	7 2529
Kavanagh, L.D., Jr.	Empirical evaluation of radial diffusion coefficients for electrons of 50-100 kev from $L = 4$ to $L = 7$	9 2959
Freeman, J.W., Jr.	Flow of low-energy ions at synchronous altitude and implications for magnetospheric convection	13 4151
Alfvén, H.	Some properties of magnetospheric neutral surfaces *[l]*	13 4379
Birmingham, T.J. +	Identification of moving magnetic field lines	17 5505
Kavanagh, L.D., Jr. +	Plasma flow in magnetosphere	17 5511
Nishida, A.	Coherence of geomagnetic *DP* 2 fluctuations with interplanetary magnetic variations	17 5549
Shawhan, S.D. +	VLF electric and magnetic fields	17 5649
Freeman, J.W. +	Plasma flow directions at magnetopause on January 13 and 14, 1967 (ATS)	17 5719
Vasyliunas, V.M.	Adiabatic motion of auroral particles in model of electric and magnetic fields surrounding earth *[d]*	17 5805
Taylor, H.E. +	Adiabatic motion of auroral particles in a model of the electric and magnetic fields surrounding the earth *[r]*	17 5807
Hoffman, R.A. +	Field-aligned electron bursts at high latitudes	19 6201
DeWitt, R.N.	Polarization of auroral electrojet	19 6307

TRAPPED PARTICLES

Birmingham, T.J. +	Charged particle energization by an arbitrarily moving magnet	1 83
Paulikas, G.A. +	Low-energy solar-cosmic-ray cutoffs: Diurnal variations and pitch-angle distributions	1 87
Armstrong, T.P. +	Protons in magnetosphere and magnetotail	1 143
Brown, W.L. +	Acceleration of trapped particles during a magnetic storm on April 18, 1965	1 153
Stevenson, T.E. +	Particles incident on magnetic field gradients	1 175
Owens, H.D. +	Electron omnidirectional intensity contours in earth's outer radiation zone at magnetic equator	1 199
Lanzerotti, L.J.	Comparison of electron response in magnetosphere at $L = 5$ with solar wind during the April 17-18, 1965, magnetic storm *[l]*	1 438
Frank, L.A. +	Energy fluxes of low-energy protons and positive ions in earth's inner radiation zone *[l]*	1 442
Newkirk, L.L. +	Radial diffusion coefficient for electrons at low L values	3 1013
Rosen, A. +	Temporal behavior of inner zone electrons, 1965-1966	3 1019
Swift, D.W.	Possible consequences of Akasofu's neutral hydrogen hypothesis *[l]*	5 1847
Bauer, S.J. +	Possible relationship between storm-time whistler cutoff and magnetospheric ring current *[l]*	5 1853
Oliven, M.N. +	Microburst phenomena, 2, Auroral-zone electrons	7 2345
Vasyliunas, V.M.	Low-energy electrons in evening sector of magnetosphere with OGO 1 and OGO 3	9 2839
Kavanagh, L.D.,Jr.	Empirical evaluation of radial diffusion coefficients for electrons of 50-100 kev from $L = 4$ to $L = 7$	9 2959
Annexstad, J.O. +	Pc 1 fine structure phase shift at high-latitude conjugate points *[l]*	9 3063
Lindstrom, P.J. +	*B-L* space and geomagnetic field models	11 3441
Konradi, A.	Rapid increases in proton and electron fluxes in magnetosphere	11 3449
Machlum, B.H.	Universal-time control of low-energy electron fluxes in polar regions	11 3459
Marbach, J.R. +	Evidence of nonfission electrons in South Atlantic anomaly	11 3477
Burch, J.L.	Low-energy electron fluxes at latitudes above auroral zone *[l]*	11 3585
Freeman, J.W.,Jr.	Flow of low-energy ions at synchronous altitude and implications for magnetospheric convection	13 4151
Imhof, W.L.	Electron precipitation in radiation belts	13 4167
Stern, D.	Euler potentials and geomagnetic drift shells	13 4373
Lanzerotti, L.J.	Outer-zone electrons and interplanetary magnetic fields during two geomagnetic storms *[l]*	13 4388
Paulikas, G.A. +	Energetic electrons at synchronous altitude, 1. General features and diurnal variations	15 4915
Birmingham, T.J. +	Identification of moving magnetic field lines	17 5505
Swisher, R.L. +	Lifetimes for low-energy protons in outer radiation zone	17 5665
Williams, D.J. +	Trapped electrons at low and high altitudes	17 5673
Lezniak, T.W. +	Structure of magnetopause at 6.6 R_E in terms of 50- to 150-kev electrons (ATS)	17 5733
Paulikas, G.A. +	Boundary of energetic electrons during January 13-14, 1967, magnetic storm (ATS)	17 5743
Lanzerotti, L.J. +	Energetic electrons at 6.6 R_E during January 13-14, 1967, geomagnetic storm (ATS)	17 5751
Parks, G.K. +	Acceleration of energetic electrons observed at the synchronous altitude during magnetospheric substorms *[l]*	17 5786
Pfitzer, K.A. +	Large addition to electron inner radiation belt after solar flare event *[l]*	17 5792
Anderson, H.R. +	Observations of POGO ion chamber experiment in outer radiation zone	19 6285
Lockwood, J.A. +	Cosmic-ray neutron flux measurements above atmosphere	21 6649
Hoffman, R.A. +	Ring current particle distributions derived from ring current magnetic field measurements	21 6711
Chapman, M.C. +	Absolute electron fluxes and energies in inner radiation zone in 1965	21 6825
Newkirk, L.L. +	Radial diffusion coefficient for electrons	23 7231
McDiarmid, I.B. +	Dependence of high latitude electron boundary on orientation of the geomagnetic axis	23 7237
Fritz, T.A.	High-latitude outer-zone boundary region for electrons during geomagnetically quiet periods	23 7245
Hones, E.W.,Jr. +	Simultaneous observations of electrons at 2000- and 100,000 km in magnetotail	23 7339
Roberts, C.S. +	Bounce resonant scattering of particles trapped in earth's magnetic field	23 7361
Gary, S.P. +	Particle acceleration by electrostatic waves with spatially varying phase velocities *[l]*	23 7524

PLASMA INSTABILITIES

Kimura, I.	Triggering of VLF magnetospheric noise by low-power transmitter *[l]*	1 445
Gurnett, D.A.	Observations of VLF hiss at very low L values *[l]*	3 1096
Reid, G.C.	Formation of small-scale irregularities in inonosphere	5 1627
Parks, G.K. +	Characteristics of modulated energetic electron precipitation occurring during auroral substorms	5 1685
McPherron, R.L. +	Correlated magnetic micropulsations and electron precipitation occurring during auroral substorms	5 1697

Coroniti, F.V. +	Concept of magnetospheric substorm and its relation to electron precipitation and micropulsations	5 1715
Scarf, F.L. +	Detection of electromagnetic and electrostatic waves on OV3-3	5 1723
Annexstad, J.O. +	Characteristics of *Pg* micropulsations at conjugate points	5 1805
Swift, D.W.	Possible consequences of Akasofu's neutral hydrogen hypothesis *[l]*	5 1847
Oliven, M.N. +	Microburst phenomena, 3, Association between microbursts and VLF chorus	7 2355
Ferraro, V.C.A. +	Confinement of magnetic field by beam of ions *[d]*	11 3605
Parker, E.N.	Confinement of magnetic field by beam of ions *[r]*	11 3607
Thorne, R.M.	Unducted whistler evidence for secondary peak in electron energy spectrum near 10 kev	15 4895
Sen, A.K.	Validity of hydromagnetic approach in discussing instability of magnetospheric boundary *[d]*	15 5015
Lerche, I.	Validity of hydromagnetic approach in discussing instability of magnetospheric boundary *[r]*	15 5017
Eviatar, A. +	Transfer processes in magnetopause	17 5561
Shawhan, S.D. +	VLF electric and magnetic fields	17 5649
Abraham-Shrauner, B.	Conservation for weakly turbulent plasmas	19 6299
Ossakow, S.L.	Anomalous resistivity along lines of force in magnetosphere *[l]*	19 6366
Perkins, F.W.	Plasma-wave instabilities in ionosphere over aurora	21 6631
Kenney, J.F. +	Magnetospheric parameters determined from structured pulsations	21 6737
Swift, D.W.	New interpretation of VLF chorus	23 7447
Das, A.C.	Mechanism for VLF emissions	23 7457

PLASMA MOTION, CONVECTION, OR CIRCULATION

Dessler, A.J.	Magnetic merging in magnetospheric tail ¢	1 209
Yoh, P.	Diurnal variation of electron concentration in lower magnetosphere	1 253
Taylor, H.A. +	Contraction of plasmasphere during geomagnetically disturbed periods	3 961
Nishida, A.	Geomagnetic D_D 2 fluctuations and associated magnetospheric phenomena	5 1795
Bauer, S.J. +	Possible relationship between storm-time whistler cutoff and magnetospheric ring current *[l]*	5 1853
Evans, D.S.	Observations of near monoenergetic flux of auroral electrons	7 2315
Lazarus, A.J. +	Plasma and magnetic field observations during magnetosphere passage of Pioneer 7	7 2399
Vasyliunas, V.M.	Low-energy electrons in evening sector of magnetosphere ¢	9 2839
Kavanagh, L.D., Jr.	Empirical evaluation of radial diffusion coefficients for electrons of 50-100 kev from $L = 4$ to $L = 7$	9 2959
Freeman, J.W., Jr.	Flow of low-energy ions at synchronous altitude and implications for magnetospheric convection	13 4151
Alfvén, H.	Some properties of magnetospheric neutral surfaces *[l]*	13 4379
Gall, R.	Daily variation of asymptotic directions of cosmic rays *[l]*	13 4400
Mayr, H.G. +	Model of magnetospheric temperature distribution	15 4851
Kavanagh, L.D., Jr. +	Plasma flow in magnetosphere	17 5511
Eviatar, A. +	Transfer processes in magnetospause	17 5561
Freeman, J.W., Jr. +	Plasma flow directions at magnetopause on January 13 and 14, 1967 (ATS)	17 5719
Vasyliunas, V.M.	Adiabatic motion of auroral particles in model of electric and magnetic fields surrounding earth *[d]*	17 5805
Taylor, H.E. +	Adiabatic motion of auroral particles in model of electric and magnetic fields surrounding earth *[r]*	17 5807
Hones, E.W. +	Observed correlations between electron bursts in magnetotail and electron precipitation in auroral zone	19 6189
Nagy, A.F. +	Nighttime cooling of protonosphere	19 6259
Banks, P.M. +	Polar wind *[l]*	21 6846
Axford, W.I.	Polar wind and terrestrial helium budget *[l]*	21 6855
Unti, T. +	Two-dimensional Chapman-Ferraro problem with neutral sheet	23 7319
Hones, E.W., Jr. +	Simultaneous observations of electrons at 2000 and 100,000 km in magnetotail	23 7339
Vasyliunas, V.M.	Low-energy electrons on day side of magnetosphere *[l]*	23 7519
Macmahon, A.B.	Collisionless shock waves in high-beta plasmas *[d]*	23 7538
Kennel, C.F.	Collisionless shock waves in high-beta plasmas *[r]*	23 7539

INTERACTIONS BETWEEN MAGNETOSPHERE AND COSMIC RAYS

Paulikas, G.A. +	Low-energy solar-cosmic-ray cutoffs: Diurnal variations and pitch-angle distributions	1 87
Gall, R. +	Arrival of low-energy cosmic rays via magnetospheric tail	5 1593
Sauer, H.H.	Nonconjugate aspects of recent polar cap absorption events *[l]*	9 3058
Yoshida, S. +	Ring current effects on cosmic rays	11 3377
Webber, W.R.	Diurnal variation of intensity and energy spectrum of low-energy electrons incident at Fort Churchill, Canada	15 4905
Blake, J.B. +	Latitude-intensity structure and pitch-angle distributions of low-energy solar cosmic rays at low altitude	15 4927
McDiarmid, I.B. +	Dependence of high latitude electron boundary on orientation of geomagnetic axis	23 7237
Gurnett, D.A. +	Low-frequency cutoff of ELF emissions	23 7437

WHISTLERS

Smith, R.L. +	Magnetospheric properties deduced observations of ducted and nonducted whistlers	1 1
Gurnett, D.A.	Observations of VLF hiss at very low L values *[l]*	3 1096
Ross, W.J. +	Local electron concentration determination from Doppler dispersion measurements of satellite radio beacons *[l]*	3 1102
Scarf, F.L. +	Detection of electromagnetic and electrostatic waves on OV3-3	5 1723
Scarf, F.L. +	Ion cyclotron whistlers in solar wind	5 1747
Bauer, S.J. +	Possible relationship between storm-time whistler cutoff and magnetospheric ring current *[l]*	5 1853
Oliven, M.N. +	Microburst phenomena, 3, association between microbursts and VLF chorus	7 2355
Carpenter, D.L.	Ducted whistler-mode propagation in magnetosphere, half-gyrofrequency upper intensity cutoff and some associated wave growth phenomena	9 2919
Carpenter, D.L. +	Alouette 1 and 2 observations of abrupt changes in whistler rate and of VLF noise variations at the plasmapause; a satellite-ground study	9 2929

Dowden, R.L.	Dotted pearl micropulsations	9 2995
Thorne, R.M.	Unducted whistler evidence for secondary peak in electron energy spectrum near 10 kev	15 4895
Taylor, W.W.L. +	Morphology of VLF emissions	17 5615
Kenney, J.F. +	Magnetospheric parameters determined from structured micropulsations	21 6737
McNeill, F.A.	Experimental evidence of an amplifying mechanism in magnetosphere *[I]*	21 6860
Das, A.C.	Mechanism for VLF emissions *[I]*	23 7457
Gary, E.P. +	Particle acceleration by electrostatic waves with spatially varying phase velocities *[I]*	23 7524
Muzzio, J.L.R.	Ion cutoff whistlers *[I]*	23 7526

WAVE PROPAGATION

Smith, R.L. +	Magnetospheric properties deduced observation of ducted and nonducted whistlers	1 1
Kimura, I.	Triggering of VLF magnetospheric noise by low-power transmitter *[I]*	1 445
Scarf, F.L. +	Detection of electromagnetic and electrostatic waves on OV3-3	5 1723
Annexstad, J.O. +	Characteristics of *Pg* micropulsations at conjugate points	5 1805
Bauer, S.J. +	Possible relationship between storm-time whistler cutoff and magnetospheric ring current *[I]*	5 1853
Murphy, B.L. +	Antipodal effect due to magnetohydrodynamic wave propagation after Starfish detonation *[I]*	5 1858
Carpenter, D.L.	Ducted whistler-mode propagation in magnetosphere, half gyrofrequency upper intensity cutoff and some associated wave growth phenomena	9 2919
Carpenter, D.L. +	Alouette 1 and 2 observations of abrupt changes in whistler rate and of VLF noise variations at the plasmapause; a satellite-ground study	9 2929
Dowden, R.L.	Dotted pearl micropulsations	9 2995
Annexstad, J.O. +	Pc 1 fine structure phase shift at high-latitude conjugate points *[I]*	9 3063
Patel, V.L.	Sudden impulses in geomagnetotail	11 3407
Shkarofsky, I.P.	Higher order cyclotron harmonic resonances and their observation in laboratory and ionosphere	15 4859
Thorne, R.M.	Unducted whistler evidence for secondary peak in electron energy spectrum near 10 kev	15 4895
McAfee, J.R.	Ray trajectories on anisotropic plasma near plasma resonance	17 5577
Thome, G.	Long-period waves generated in polar ionosphere during onset of magnetic storms	19 6319
Lewak, G.J.	Subsidiary resonances in ionosphere *[I]*	19 6379
Sugiura, M. +	Propagation of sudden commencement of July 8, a966, to the magnetotail	21 6699
Kenney, J.F. +	Magnetospheric parameters determined from structured micropulsations	21 6737
McNeill, F.A.	Experimental evidence of an amplifying mechanism in magnetosphere *[I]*	21 6860
Fredricks, R.W. +	Magnetosonic wave propagating across magnetic field in warm collisionless plasma	23 7429
Gurnett, D.A. +	Low-frequency cutoff of ELF emissions	23 7437
Muzzio, J.L.R.	Ion cutoff whistlers *[I]*	23 7526

MAGNETIC COORDINATE SYSTEMS

Kavanagh, L.D., Jr.	Revised (*B,L*) coordinate system to allow for distention of the magnetosphere by a symmetric ring current	1 185
Sauer, H.H.	Nonconjugate aspects of recent polar cap absorption events *[I]*	9 3058
Lindstrom, P.J. +	*B--L* space and geomagnetic field models	11 3441
Stern, D.	Euler potentials and geomagnetic drift shells	13 4373
Paulikas, G.A. +	Energetic electrons at synchronous altitude, 1. General features and diurnal variations	15 4915
Wait, J.R.	Mode conversion at VLF in earth-ionosphere waveguide *[I]*	17 5801

INSTRUMENTS AND TECHNIQUES

Ness, N.F.	Magnetodynamically induced ambiguity in the data from tilted, spinning fluxgate magnetometers *[d]*	9 3077
Fredricks, R.W. +	Magnetodynamically induced ambiguity in data from tilted, spinning fluxgate magnetometers *[r]*	9 3081

GENERAL OR MISCELLANEOUS

Smith, R.L. +	Magnetospheric properties deduced observations of ducted and nonducted whistlers	1 1
Birmingham, T.J. +	Charged particle energization by an arbitrarily moving magnet	1 83
Yngvesson, K.O. +	Radar Thomson scatter studies of photoelectrons in ionosphere and Landau damping	1 97
Armstrong, T.P. +	Protons in magnetosphere and magnetotail	1 143
Donahue, T.M.	Interaction of neutral hydrogen and charged particles in radiation belts *[d]*	13 4455
Kondo, Y. +	Interaction of neutral hydrogen and charged particles in radiation belts *[r]*	13 4457
Ossakow, S.L.	Anomalous resistivity along lines of force in magnetosphere *[I]*	19 6366

PARTICLES AND FIELDS IN THE IONOSPHERE

HIGH-LATITUDE IONOSPHERIC CURRENTS

Föppl, H. +	Electric field measurements in auroral zone	1 21
Maehlum, B.N. +	Mutual effect of precipitated auroral electrons and auroral electrojet	5 1679
Nishida, A.	Geomagnetic D_p 2 fluctuations and associated magnetospheric phenomena	5 1795
Block, L.P. +	Effects of field-aligned currents on ionospheric structure	15 4807

Vasyliunas, V.M.	Adiabatic motion of auroral particles in model of electric and magnetic fields surrounding earth *[d]*	17 5805
Taylor, H.E. +	Adiabatic motion of auroral particles in a model of electric and magnetic fields surrounding earth *[r]*	17 5807
DeWitt, R.N.	Polarization of auroral electrojet	19 6307

LOW-LATITUDE IONOSPHERIC CURRENTS

Maeda, H. +	Electric currents induced by nonperiodic winds in ionosphere	3 1077
Aikin, A.C. +	*E*-region concentration distribution in vicinity of geomagnetic equator	5 1617
Cloutier, P.A. +	Vector measurement of the midlatitude *Sq* ionospheric current system	5 1771
Sastry, T.S.G.	Quiet-day electrojet over Thumba, India	5 1789

AURORAL-ZONE MAGNETIC EFFECTS

Rostoker, G.	Macrostructure of geomagnetic bays	13 4217
Rostoker, G.	Relationship between onset of geomagnetic bay and configuration of interplanetary magnetic field *[l]*	13 4382
Vancour, R.P. +	Electron and proton intensities in magnetic disturbance *[l]*	15 4979
Hones, E.W., Jr. +	Observed correlations between electron bursts in magnetotail and electron precipitation in auroral zone	19 6189
DeWitt, R.N.	Polarization of auroral electrojet	19 6307
Brown, R.R. +	Mutual effect of precipitated auroral electrons and auroral electrojet *[d]*	19 6392
Maehlum, B.N. +	Mutual effect of precipitated auroral electrons and auroral electrojet *[r]*	19 6394
Cummings, W.D. +	Magnetospheric substorms observed at synchronous orbit	21 6687
Hones, E.W., Jr. +	Simultaneous observations of electrons at 2000 and at 100,000 km in magnetotail	23 7339
Wilhelm, K.	Occurrences of Pc 1 pulsations in magnetospheric substorms	23 7491

AURORAS

Eather, R.H.	Spectral intensity ratios in proton-induced auroras	1 119
Berkey, F.T.	Coordinated measurements of auroral absorption and luminosity using narrow beam technique	1 319
Mozer, F.S.	Rapid variations of auroral particle fluxes	3 999
Speiser, T.W.	Uncoupling of parallel and perpendicular particle motion in neutral sheet *[l]*	3 1112
Whalen, B.A. +	Direct measurement of auroral alpha particles	7 2307
Ogilvie, K.W.	Auroral electron energy spectra	7 2325
Bradbury, J.N. +	Simultaneous measurements of electron content and charged-particle precipitation in region of auroral activity	7 2363
Fremouw, E.J. +	VHF refraction by visible auroral forms *[l]*	9 3053
Reidy, W.P. +	Low-energy electron spectra in three visible auroras *[l]*	9 3072
Miller, R.E. +	Rocket studies of far-ultraviolet radiation in aurora	11 3353
Chase, L.M.	Spectral measurements of auroral-zone particles	11 3469
Reasoner, D.L. +	Detection of alpha particles in auroral phenomena	13 4185
Hoch, R.J. +	Reappearance of stable auroral red arc at midlatitudes	13 4213
Bell, T.F.	Artificial production of VLF hiss *[l]*	13 4409
Wax, R.L. +	Detection of presence of alpha particles in auroral fluxes *[d]*	13 4452
Albert, R.D.	Detection of presence of alpha particles in auroral fluxes *[r]*	13 4453
Vasyliunas, V.M.	Adiabatic motion of auroral particles in model of electric and magnetic fields surrounding earth *[d]*	17 5805
Taylor, H.E. +	Adiabatic motion of auroral particles in model of electric and magnetic fields surrounding earth *[r]*	17 5807
Hoffman, R.A. +	Field-aligned electron bursts at high latitudes	19 6201
Porcello, L.J. +	Observed fine structure of phase perturbation induced during transauroral propagation	19 6337
Reasoner, D.L.	Direct measurement of auroral alpha particles *[d]*	19 6387
Whalen, B.A. +	Direct measurement of auroral alpha particles *[r]*	19 6388
Perkins, F.W.	Plasma-wave instabilities in ionosphere over aurora	21 6631
Fritz, T.A.	High-latitude outer-zone boundary region for electrons during geomagnetically quiet periods	23 7245
Thomas, J.O. +	Transpolar exospheric plasma, 1, Plasmasphere termination	23 7407

PARTICLE PRECIPITATION

Föppl, H. +	Electric field measurements in auroral zone	1 21
Yngvesson, K.O. +	Radar Thomson scatter studies of photoelectrons in ionosphere and Landau damping	1 97
Eather, R.H.	Spectral intensity ratios in proton-induced auroras	1 119
Berkey, F.T.	Coordinated measurements of auroral absorption and luminosity using narrow beam technique	1 319
Carpenter, G.B. +	VLF amplitude perturbations in Antarctic due to nuclear explosion of July 9, 1962	1 393
Knudsen, W.C.	Geographic distribution of *F*-region electrons with about 10-ev energy	3 841
Sharp, R.D. +	Some average properties of auroral electron precipitation as determined from satellite observations	3 969
Mozer, F.S.	Rapid variations of auroral particle fluxes	3 999
Rosen, A. +	Temporal behavior of inner zone electrons, 1965-1966	3 1019
Jørgensen, T.S.	Interpretation of auroral hiss in terms of incoherent Cerenkov radiation	3 1055
Maehlum, B.N. +	Mutual effect of precipitated auroral electrons and auroral electrojet	5 1679
Parks, G.K. +	Characteristics of modulated energetic electron precipitation occurring during auroral substorms	5 1685
McPherron, R.L. +	Correlated magnetic micropulsations and electron precipitation occurring during auroral substorms	5 1697
Coroniti, F.V. +	Concept of the magnetospheric substorm and its relation to electron precipitation and micropulsations	5 1715
Whalen, B.A. +	Direct measurement of auroral alpha particles	7 2307
Evans, D.S.	Observations of near monoenergetic flux of auroral electrons	7 2315
Venkatesan, D. +	Microburst phenomena, 1, Auroral-zone X rays	7 2333
Oliven, M.N. +	Microburst phenomena, 2, Auroral-zone electrons	7 2345

Oliven, M.N. +	Microburst phenomena, 3, Association between microbursts and VLF chorus	7 2355
Bradbury, J.N. +	Simultaneous measurements of electron content and charged-particle precipitation in region of auroral activity	7 2363
Brown, R.R. +	Temporal features of high-intensity auroral microbursts *[l]*	9 3042
Reidy, W.P. +	Low-energy electron spectra in three visible auroras *[l]*	9 3072
Miller, R.E. +	Rocket studies of far-ultraviolet radiation in aurora	11 3353
Chase, L.M.	Spectral measurements of auroral-zone particles	11 3469
Marbach, J.R. +	Evidence of nonfission electrons in South Atlantic anomaly	11 3477
Burch, J.L.	Low-energy electron fluxes at latitudes above auroral zone *[l]*	11 3585
Imhof, W.L.	Electron precipitation in radiation belts	13 4167
Reasoner, D.L. +	Detection of alpha particles in auroral phenomena	13 4185
Wax, R.L. +	Detection of presence of alpha particles in auroral fluxes *[d]*	13 4452
Albert, R.D.	Detection of presence of alpha particles in auroral fluxes *[r]*	13 4453
Vancour, R.P.	Electron and proton intensities in magnetic disturbance *[l]*	15 4979
Parks, G.K. +	Acceleration of energetic electrons observed at the synchronous altitude during magnetospheric substorms *[l]*	17 5786
Hones, E.W.,Jr. +	Observed correlations between electron bursts in magnetotail and electron precipitation in auroral zone	19 6189
Hoffman, R.A. +	Field-aligned electron bursts at high latitudes	19 6201
Knudsen, W.C. +	F_s region electron concentration enhancements from inner radiation belt particles	19 6275
Anderson, H.R. +	Observations of POGO ion chamber experiment in outer radiation zone	19 6285
Knudsen, W.C.	Equatorial VLF hiss and intense fluxes of soft electrons *[l]*	19 6384
Reasoner, D.L.	Direct measurement of auroral alpha particles *[d]*	19 6387
Whalen, B.A. +	Direct measurement of auroral alpha particles *[r]*	19 6388
Brown, R.R. +	Mutual effect of precipitated auroral electrons and auroral electrojet *[d]*	19 6392
Maehlum, B.N. +	Mutual effect of precipitated auroral electrons and auroral electrojet *[r]*	19 6394
Krassovsky, V.I.	Interaction of neutral hydrogen and charged particles in radiation belts: Lyman-alpha emission *[d]*	19 6402
Kondo, Y. +	Interaction of neutral hydrogen and charged particles in radiation belts: Lyman-alpha emission *[r]*	19 6403
Fritz, T.A.	High-latitude outer-zone boundary region for electrons during geomagnetically quiet periods	23 7145
Walker, J.C.G.	Nocturnal ionization source at Fort Churchill	23 7285
Thomas, J.O. +	Transpolar exospheric plasma, 1, Plasmasphere termination	23 7407
Swift, D.W.	New interpretation of VLF chorus	23 7447

ELECTRIC FIELDS

Föppl, H. +	Electric field measurements in auroral zone	1 21
Mende, S.B.	Electric fields parallel to magnetic field in auroral ionosphere	3 991
Maeda, H. +	Electric currents induced by nonperiodic winds in ionosphere, 1	3 1077
Reid, G.C.	Formation of small-scale irregularities in ionosphere	5 1627
Cloutier, P.A. +	Vector measurement of the midlatitude *Sq* ionospheric current system	5 1771
Evans, D.S.	Observations of near monoenergetic flux of auroral electrons	7 2315
Ogilvie, K.W.	Auroral electron energy spectra	7 2325
Webb, W.L.	Source of atmospheric electrification	16 5061
Vasyliunas, V.M.	Adiabatic motion of auroral particles in model of electric and magnetic fields surrounding earth *[d]*	17 5805
Hones, E.W.,Jr. +	Adiabatic motion of auroral particles in a model of the electric and magnetic fields surrounding earth *[r]*	17 5807
DeWitt, R.N.	Polarization of auroral electrojet	19 6307
Gary, S.P. +	Particle acceleration by electrostatic waves with spatially varying phase velocities *[l]*	23 7524

ION DENSITIES AND TEMPERATURES

LeLevier, R.E. +	Ion chemistry governing mesospheric electron concentrations	1 27
Sato, T	Abnormally large electron concentration in the ionospheric F_2 region at summer-night in middle latitudes	1 127
Hanson, W.B. +	Photoelectron heating efficiency in ionosphere	3 831
Knudsen, W.C.	Geographic distribution of *F*-region electrons with about 10-ev energy	3 841
Stebbings, R.F. +	Low-energy collisions between $O^+(^4S)$ and H(1*s*)	3 1035
Bowyer, C.S. +	Upper limits to the 304- and 584-A night helium glow *[l]*	3 1107
Lootens, H.T. +	Electron concentration profiles during sunspot maximum and minimum *[l]*	3 1114
Brace, L.H. +	Early effects of increasing solar activity upon temperature and density of the 1000-km ionosphere	5 1607
Aikin, A.C. +	*E*-region electron concentration distribution in vicinity of geomagnetic equator	5 1617
Rao, P.B.	Electron concentrations and electron and ion temperatures in the *F* region for magnetically quiet and disturbed conditions	5 1661
Davidson, M.J. +	Spatial coherence of geomagnetic rapid variations	6 2143
Hunten, D.M. +	Metastable $O_2(^1\Delta)$ as major source of ions in *D* region	7 2421
Bettinger, R.T. +	End effect associated with cylindrical Langmuir probes moving at satellite velocities	7 2513
Colin, L. +	Charged-particle temperatures and concentrations in earth's exosphere	9 2967
Sauer, H.H.	Nonconjugate aspects of recent polar cap absorption events *[l]*	9 3058
Keller, G.E.	Use of ionic mobilities for measurements in lower ionosphere	11 3483
Evans, J.V.	Sunrise behavior of the *F* layer at midlatitudes	11 3489
Heikkila, W.J. +	Comparison of several probe techniques for ionospheric electron concentration measurements	11 3511
Shea, M.F. +	Measurements and interpretation of low-energy photoelectrons	13 4199
Monro, P.E. +	Ordinary mode standing waves in *E* region	13 4291
Moss, S.J. +	Minimum variance technique for analysis of ionospheric data acquired in satellite retarding potential analyzer experiments	13 4315
Hunten, D.M. +	Upper atmosphere of Venus: Regulus occultation reconsidered *[l]*	13 4446
Banks, P.M. +	He_2^+ in the topside ionosphere *[l]*	15 5008
Flood, W.A.	Revised theory for partial reflection *D*-region measurements	17 5585

McInnes, B.A. Variations of plasma scale height in upper ionosphere during sunrise period 17 5603
Ferguson, E.E. + Metal ion chemistry of earth's atmosphere 19 6215
Knudsen, W.C. + F_2-region electron concentration enhancements from inner radiation belt particles 19 6275
Wand, R.H. + Radar Thomson scatter observations of temperature and ion-neutral collision frequency in the *E* region *[l]* 19 6370
Turner, B.R. + Charge transfer and ion-atom interchange reactions of water vapor ions 21 6751
Seliga, T.A. Analysis and results of low-frequency CW rocket propagation experiments in *D* region 21 6783
Prasad, S.S. Nighttime ionic composition and temperature over Arecibo 21 6795
Banks, P.M. + Polar wind *[l]* 21 6846
Axford, W.I. Polar wind and terrestrial helium budget *[l]* 21 6855
Walker, J.C.G. + Nocturnal ionization source at Fort Churchill 23 7285
Smith, F.L.III Electron production and loss rates in *F* region 23 7385
Shimazaki, T. + Nighttime variations of *F*-region electron concentration profiles 23 7399
Thomas, J.O. + Transpolar exospheric plasma, 1, Plasmosphere termination 23 7407
Gregory, J.B. + Capability of a high-power wave interaction facility *[d]* 23 7540
Ferraro, A.J. + Capability of a high-power facility *[r]* 23 7543

IONOSPHERIC DISTURBANCES

Lelevier, R.E. + Ion chemistry governing mesospheric electron concentrations 1 27
Reddy, C.A. + Physical significance of E_s parameters f_bE_s, and f_0E_s 1 215
Weinstock, J. Magnitudes of ionospheric irregularities from backscatter measurements 1 225
Titheridge, J.E. Periodic disturbances in ionosphere 1 243
Sorenson, W.R. Investigation of possible ionospheric heating by hydromagnetic waves 1 287
Singleton, D.G. Morphology of Spread-*F* occurrence over half a sunspot cycle 1 295
Berkey, F.T. Coordinated measurements of auroral absorption and luminosity using narrow beam technique 1 319
Carpenter, G.B. + VLF amplitude perturbations in Antarctic due to nuclear explosion of July 9, 1962 1 393
Baker, D.M. + Waves in the ionosphere produced by nuclear explosions *[l]* 1 448
Taylor, H.A.,Jr. + Contraction of plasmasphere during geomagnetically disturbed periods 3 961
Albee, P.R. + Spatial model of *F*-region ionospheric traveling disturbance following a low-altitude nuclear explosion 3 1039
Reid, G.C. Formation of small-scale irregularities in ionosphere 5 1627
Reddy, C.A. + Solar cycle variation of blanketing sporadic *E* 5 1641
Cloutier, P.A. + Vector measurement of the midlatitude *Sq* ionospheric current system 5 1771
Doherty, R.H. Importance of associative detachment and dissociative attachment in lower ionosphere as shown by LF radio measurements 7 2429
Dyson, P.L. Topside spread *F* at midlatitudes 7 2441
Baird, G.A. Occurrence of sporadic *E* in polar cap 11 3505
Wait, J.R. Mode conversion and refraction effects in earth-ionosphere waveguide for VLF radio waves ¢ 11 3537
Fremouw, E.J. + Radio-star visibility fades in Alaska near solar minimum 11 3565
Millman, G.H. + Ionospheric phase fluctuations of satellite transmissions *[l]* 13 4434
Mentzoni, M. Ionospheric *G* factor *[l]* 13 4444
Block, L.P. + Effects of field-aligned currents on ionospheric structure 15 4807
Lutomirski, R.F. Model for generation of magnetohydrodynamic waves by high-altitude nuclear bursts 15 4943
Smith, L.B. Strong thermospheric winds during geomagnetic storm 15 4959
Reddy, C.A. Physical significance of the E_s parameters f_bE_s, fE_s, and f_0E_s, 2. Causes of partial reflections from E_s 17 5627
Wait, J.R. Mode conversion at VLF in earth-ionosphere waveguide *[l]* 17 5801
Ferguson, E.E. + Metal ion chemistry of earth's atmosphere 19 6215
Sato, T. Electron concentration variations in topside ionosphere between 60°N and 60°S geomagnetic latitude associated with geomagnetic disturbances 19 6225
Mechtly, E.A. + Rocket electron concentration measurements on winter days of normal and anomalous absorption 19 6243
D'Angelo, N. Effects of ion-neutral collisions on ion-acoustic instabilities in auroral ionosphere 19 6313
Thome, G. Long-period waves generated in polar ionosphere during onset of magnetic storms 19 6319
Porcello, L.J. + Observed fine structure of phase perturbation induced during transauroral propagation 19 6337
Greifinger, C. + Hydromagnetic propagation in ionospheric waveguide 23 7473
Klobuchar, J.A. + Midlatitude nighttime total electron content behavior during magnetically disturbed periods *[l]* 23 7530

X RAYS

Venkatesan, D. + Microburst phenomena, 1, Auroral-zone X rays 7 2333
Oliven, M.N. + Microburst phenomena, 2, Auroral-zone electrons 7 2345
Brown, R.R. + Temporal features of high-intensity auroral microbursts *[l]* 9 3042
Grader, R.J. + X-ray airglow in daytime sky *[l]* 22 7149

AIRGLOW

Eather, R.H. Spectral intensity ratios in proton-induced auroras 1 119
Sparrow, J.G. + Airglow observations from OSO-B2 satellite 3 857
Smith, L.L. + Night airglow intensity variations in [O I] 5577 A, [O I] 6300 A, and NaI 5890-96 A emission lines *[l]* 7 2531
Barth, C.A. + Mariner 5 measurement of Lyman-alpha radiation near Venus *[l]* 7 2541
Evans, W.F.J. + Altitude profile of infrared atmospheric system of oxygen in dayglow 9 2885
Reed, E.I. Night measurement of mesospheric ozone by observations of ultraviolet airglow 9 2951
Doherty, L.R. Ultraviolet dayglow measurement with X-15 aircraft *[l]* 11 3597
Tinsley, B.A. Temporal variations in geocoronal Balmer alpha 13 4139
Wallace, L. + Dayglow of the oxygen A band 15 4813

Gulledge, I.S. +	Intensity profiles of the 6300-A O I lines in night airglow	17 5535
Krassovsky, V.I.	Interaction of neutral hydrogen and charged particles in radiation belts: Lyman-alpha emission *[d]*	19 6402
Kondo, Y. +	Interaction of neutral hydrogen and charged particles in radiation belts: Lyman-alpha emission *[r]*	19 6403
Grader, R.J. +	X-ray airglow in daytime sky *[l]*	22 7149
Gurnett, D.A. +	Low-frequency cutoff of ELF emissions	23 7437

WAVE PROPAGATION

Weinstock, J.	Magnitudes of ionospheric irregularities from backscatter measurements	1 225
Sorenson, W.R.	Investigation of possible ionospheric heating by hydromagnetic waves	1 287
Singleton, D.G.	Morphology of spread-*F* occurrence over half a sunspot cycle	1 295
Galejs, J.	Propagation of ELF and VLF waves below an anisotropic ionosphere with a dipping static magnetic field	1 339
Willman, J.F. +	Accuracy of satellite Doppler data for ionospheric study, navigation, and geodesy	1 385
Carpenter, G.B. +	VLF amplitude perturbations in Antarctic due to nuclear explosion of July 9, 1962	1 393
Rao, S.S. +	Asymptotic solutions of waves in inhomogeneous plasma with longitudinal magnetic field	1 415
Baker, D.M. +	Waves in the ionosphere produced by nuclear explosions *[l]*	1 448
Ross, W.J. +	Local electron concentration determination from Doppler dispersion measurements of satellite radio beacons *[l]*	3 1102
Lootens, H.T. +	Electron concentration profiles during sunspot maximum and minimum *[l]*	3 1114
Bowen, E.D. +	VHF characteristics of transequatorial ionosphere	7 2469
Mahajan, K.K. +	Incoherent backscatter study of electron content and equivalent slab thickness	7 2477
Sato, T.	Brillouin scattering in plasmas as applied to ionospheric irregularities	9 2941
Colin, L. +	Charged-particle temperatures and concentrations in earth's exosphere	9 2967
Fremouw, E.J. +	VHF refraction by visible auroral forms *[l]*	9 3053
Wait, J.R.	Mode conversion and refraction effects in earth-ionosphere waveguide for VLF radio waves ¢	11 3537
Manchester, R.N.	Correlation of Pc 1 micropulsations at spaced stations ¢	11 3549
Fremouw, E.J.	Measurement of phase variance and autocorrelation during radio-star visibility fades	11 3557
Fremouw, E.J. +	Radio-star visibility fades in Alaska near solar minimum	11 3565
Guthart, H. +	Proton gyrofrequency band emissions observed aboard OGO 2 *[l]*	11 3592
Monro, P.E. +	Ordinary mode standing waves in *E* region	13 4291
Tucker, A.J. +	Ionospheric contributions to Doppler shift of CW signals from artificial earth satellites	13 4325
Large, D.B. +	Electromagnetic coupling phenomena in earth-ionosphere cavity	13 4335
Gage, B.P. +	Artificial excitation of Schumann resonances in earth-ionosphere cavity *[l]*	13 4416
Ferraro, A.J. +	Capability of high-power wave interaction facility *[l]*	13 4427
Galejs, J. +	Propagation of ELF and VLF waves below models of naturally perturbed ionospheres *[l]*	13 4439
Shkarofsky, I.P.	Higher order cyclotron harmonic resonances and their observation in laboratory and ionosphere	15 4859
Lutomirski, R.F.	Model for generation of magnetohydrodynamic waves by high-altitude nuclear bursts	15 4943
Larsen, T.R. +	Fine structure of earth-ionosphere cavity resonances *[l]*	15 4986
McAfee, J.R.	Ray trajectories in anisotropic plasma near plasma resonance	17 5577
Flood, W.A.	Revised theory for partial reflection *D*-region measurements	17 5585
Wait, J.R.	Mode conversion at VLF in earth-ionosphere waveguide *[l]*	17 5801
Mechtly, E.A. +	Rocket electron concentration measurements on winter days of normal and anomalous absorption	19 6243
D'Angelo, N.	Effects of ion-neutral collisions on ion-acoustic instabilities in auroral ionosphere	19 6313
Porcello, L.J. +	Observed fine structure of phase perturbation induced during transauroral propagation	19 6337
Lewak, G.J.	Subsidiary resonances in ionosphere *[l]*	19 6379
Fredricks, R.W. +	Magnetosonic wave propagating across magnetic field in warm collisionless plasma	23 7429
Gurnett, D.A. +	Low-frequency cutoff of ELF emissions	23 7437
Greifinger, C. +	Hydromagnetic propagation in ionospheric waveguide	23 7473
Muzzio, J.L.R.	Ion cutoff whistlers *[l]*	23 7526

TOTAL ELECTRON CONTENT

Titheridge, J.E.	Periodic disturbances in ionosphere	1 243
Yoh, P.	Diurnal variation of electron concentration in lower magnetosphere	1 253
Willman, J.F. +	Accuracy of satellite Doppler data for ionospheric study, navigation, and geodesy	1 385
Bradbury, J.N. +	Simultaneous measurements of electron content and charged-particle precipitation in region of auroral activity	7 2363
Rao, N.N. +	Comparison of Faraday and Doppler methods of obtaining ionospheric electron content	7 2447
Rufenach, C.L. +	Faraday rotation measurements of electron content near magnetic equator	7 2459
Mahajan, K.K. +	Incoherent backscatter study of electron content and equivalent slab thickness	7 2477
Titheridge, J.E.	Nighttime changes in electron content of ionosphere	9 2985
Shea, M.F. +	Measurements and interpretation of low-energy photoelectrons	13 4199
Monro, P.E. +	Ordinary mode standing waves in *E* region	13 4291
Tucker, A.J. +	Ionospheric contributions to Doppler shift of CW signals from artificial earth satellites	13 4325
Oster, A.L. +	Method of measuring electron and ion densities in region of 40-80 km *[l]*	13 4421
Millman, G.H. +	Ionospheric phase fluctuations of satellite transmissions *[l]*	13 4434
Block, L.P. +	Effects of field-aligned currents on ionospheric structure	15 4807
Fritz, R.B. +	Response of ionospheric and exospheric electron contents to partial solar eclipse *[l]*	15 4994
Basu, S. +	Latitude variation of electron content in equatorial region under magnetically quiet and active conditions	17 5599
Rao, N.N. +	Comparison of ionospheric electron content observations at different stations *[l]*	19 6373
Klobuchar, J.A. +	Midlatitude nighttime total electron content behavior during magnetically disturbed periods *[l]*	23 7530

INTERACTIONS BETWEEN WAVES AND PARTICLES

Yngnesson, K.O. +	Radar Thomson scatter studies of photoelectrons in ionosphere and Landau damping	1 97
Reddy, C.A. +	Physical significance of E_s parameters f_bE_s, fE_s, and f_oE_s	1 215
Weinstock, J.	Magnitudes of ionospheric irregularities from backscatter measurements	1 225
Kimura, I.	Triggering of VLF magnetospheric noise by low-power transmitter *[I]*	1 445
Albee, P.R. +	Spatial model of *F*-region ionospheric traveling disturbance following a low-altitude nuclear explosion	3 1039
Jørgensen, T.S.	Interpretation of auroral hiss in terms of incoherent Cerenkov radiation	3 1055
Reid, G.C.	Formation of small-scale irregularities in ionosphere	5 1627
Reddy, C.A. +	Solar cycle variation of blanketing sporadic *E*	5 1641
Parks, G.K. +	Characteristics of modulated energetic electron precipitation occurring during auroral substorms	5 1685
McPherron, R.L. +	Correlated magnetic micropulsations and electron precipitation occurring during auroral substorms	5 1697
Coroniti, F.V. +	Concept of the magnetospheric substorm and its relation to electron precipitation and micropulsations	5 1715
Oliven, M.N. +	Microburst phenomena, 3, Association between microbursts and VLF chorus	7 2355
Mahajan, K.K. +	Incoherent backscatter study of electron content and equivalent slab thickness	7 2477
Sato, T.	Brillouin scattering in plasmas as applied to ionospheric irregularities	9 2941
Guthart, H. +	Proton gyrofrequency band emissions observed aboard OGO 2 *[I]*	11 3592
Bell, T.F.	Artificial production of VLF hiss *[I]*	13 4409
Ferraro, A.J. +	Capability of high-power wave interaction facility *[I]*	13 4427
Mentzoni, M.	Ionospheric *G* factor *[I]*	13 4444
Shkarofsky, I.P.	Higher order cyclotron harmonic resonances and their observation in laboratory and ionosphere	15 4859
Shawhan, S.D. +	VLF electric and magnetic fields	17 5649
Williams, D.J. +	Trapped electrons at low and high altitudes	17 5673
Lewak, G.J.	Subsidiary resonances in ionosphere *[I]*	19 6379
Knudsen, W.C.	Equatorial VLF hiss and intense fluxes of soft electrons *[I]*	19 6384
Krassovsky, V.I.	Interaction of neutral hydrogen and charged particles in radiation belts: Lyman-alpha emission *[d]*	19 6402
Kondo, Y. +	Interaction of neutral hydrogen and charged particles in radiation belts: Lyman-alpha emission *[r]*	19 6403
Perkins, F.W.	Plasma-wave instabilities in ionosphere over aurora	21 6631
Swift, D.W.	New interpretation of VLF chorus	23 7447
Gary, S.P. +	Particle acceleration by electrostatic waves with spatially varying phase velocities *[I]*	23 7524

INSTRUMENTS AND TECHNIQUES

Berkey, F.T.	Coordinated measurements of auroral absorption and luminosity using narrow beam technique	1 319
Sparrow, J.G. +	Airglow observations from OSO-B2 satellite	3 857
Mende, S.B.	Electric fields parallel to magnetic field in auroral ionosphere	3 991
Bowyer, C.S. +	Upper limits to the 304- and 584-A night helium glow *[I]*	3 1107
Aikin, A.C. +	*E* region electron concentration distribution in vicinity of geomagnetic equator	5 1617
Cloutier, P.A. +	Vector measurement of the midlatitude *Sq* ionospheric current system	5 1771
Whalen, B.A. +	Direct measurement of auroral alpha particles	7 2307
Rao, N.N. +	Comparison of Faraday and Doppler methods of obtaining ionospheric electron content	7 2447
Bettinger, R.T. +	End effect associated with cylindrical Langmuir probes moving at satellite velocities	7 2513
Colin, L. +	Charged-particle temperatures and concentrations in earth's exosphere	9 2967
Keller, G.E.	Use of ionic mobilities for measurements in lower ionosphere	11 3483
Heikkila, W.J. +	Comparison of several probe techniques for ionospheric electron concentration measurements	11 3511
Fremouw, E.J.	Measurement of phase variance and autocorrelation during radio-star visibility fades	11 3557
Oster, A.L. +	Method of measuring electron and ion densities in region of 40-80 km *[I]*	13 4421
Ferraro, A.J. +	Capability of high-power wave interaction facility *[I]*	13 4427
Millman, G.H. +	Ionospheric phase fluctuations of satellite transmissions *[I]*	13 4434
Gulledge, I.S. +	Intensity profiles of the 6300-A and 5577-A O I lines in night airglow	17 5535
Flood, W.A. +	Revised theory for partial reflection *D*-region measurements	17 5585
Gregory, J.B. +	Capability of a high-power wave interaction facility *[d]*	23 7540
Ferraro, A.J. +	Capability of a high-power wave interaction facility *[r]*	23 7543

GENERAL OR MISCELLANEOUS

Chimonas, G. +	Vertical movement of temperate-zone sporadic *E* layers	1 111
Brace, L.H. +	Early effects of increasing solar activity upon temperature and density of 1000-km ionosphere	5 1607
Murphy, C.H. +	Ionospheric winds over Yuma, Arizona, measured by gun-launched projectiles	9 3005
Wait, J.R.	Mode conversion and refraction effects in earth-ionosphere waveguide for VLF radio waves ¢	11 3537
Ferraro, A.J. +	Capability of high-power wave interaction facility *[I]*	13 4427
Stanley, G.	Anomalous *D*-region partial reflections after high-yield nuclear detonations *[I]*	13 4430
Wax, R.L. +	Detection of presence of alpha particles in auroral fluxes *[d]*	13 4452
Albert, R.D.	Detection of presence of alpha particles in auroral fluxes *[r]*	13 4453
Larsen, T.R. +	Fine structure of earth-ionosphere cavity resonances *[I]*	15 4986
Nagy, A.F. +	Nighttime cooling of protonosphere	19 6259
Shimazaki, T. +	Nighttime variations of *F*-region electron concentration profiles	23 7399

AERONOMY

ATMOSPHERIC COMPOSITION (atomic or molecular)

Ghosh, S.N.	Distributions and lifetimes of N and NO between 100 and 280 kilometers	1 309

Rosen, J.	Simultaneous dust and ozone soundings over North and Central America	2 479
Randhawa, J.S.	Mesospheric ozone measurements during a solar eclipse	2 493
Stebbings, R.F. +	Low-energy collisions between $O^+(^4S)$ and H(1s)	3 1035
Mauersberger, K. +	Mass spectrometric determination of neutral constituents in lower thermosphere above Sardinia	3 1071
Bowyer, C.S. +	Upper limits to the 304- and 584-A night helium glow *[l]*	3 1107
Haines, A. +	Tritium content of atmospheric methane and ethane	4 1167
Hunten, D.M. +	Metastable $O_2(^1\Delta)$ as major source of ions in *D* region	7 2421
Doherty, R.H.	Importance of associative detachment and dissociative attachment in lower ionosphere as shown by LF radio measurements	7 2429
Smith, L.L. +	Night airglow intensity variations in [O I] 5577 A, [O I] 6300 A, and NaI 5890-96A emission lines *[l]*	7 2531
Barth, C.A. +	Mariner 5 measurements of Lyman-alpha radiation near Venus *[l]*	7 2541
Evans, W.F.J. +	Altitude profile of infrared atmospheric system of oxygen in dayglow	9 2885
Reed, E.I.	Night measurement of mesospheric ozone by observations of ultraviolet airglow	9 2951
Kelley, J.J., Jr. +	Vertical gradient of net oxidant near the ground surface at Barrow, Alaska *[l]*	10 3328
Keller, G.E.	Use of ionic mobilities for measurements in lower ionosphere	11 3483
Tinsley, B.A.	Temporal variations in geocoronal Balmer alpha	13 4139
Monro, P.E. +	Ordinary mode standing waves in *E* region	13 4291
Ghosh, S.N. +	Atomic nitrogen in the upper atmosphere *[l]*	13 4425
Hunten, D.M. +	Upper atmosphere of Venus: Regulus occultation reconsidered *[l]*	13 4446
Wallace, L. +	Dayglow of the oxygen A band	15 4813
Weeks, L.H. +	Molecular oxygen concentrations in upper atmosphere	15 4835
Breiland, J.G.	Some large-scale features of the vertical distribution of atmospheric ozone associated with the thermal structure of the atmosphere	16 5021
Lovill, J.E. +	The vertical distribution of ozone over the San Francisco Bay area	16 5073
Kroening, J.L. +	Transport of material across the tropopause *[l]*	16 5463
Taylor, H.A., Jr. +	Thermal ions in exosphere; evidence of solar and geomagnetic control	17 5521
Gulledge, I.S. +	Intensity profiles of the 6300-A and 5577-A O I lines in night airglow	17 5535
Krassovsky, V.I.	Interaction of neutral hydrogen and charged particles in radiation belts: Lyman-alpha emission *[d]*	19 6402
Kondo, Y. +	Interaction of neutral hydrogen and charged particles in radiation belts: Lyman-alpha emission *[r]*	19 6403
Kasprzak, W.T. +	Study of day-night variations in neutral composition of lower thermosphere	21 6765
Prasad, S.S.	Nighttime ionic composition and temperature over Arecibo	21 6795
Axford, W.I.	Polar wind and terrestrial helium budget *[l]*	21 6855
Krankowsky, D. +	Mass spectrometric studies of composition of lower thermosphere	23 7291
Thomas, J.O. +	Transpolar exospheric plasma, 1, Plasmasphere termination	23 7407
Huffman, R.E. +	Effect of absorption by atomic oxygen and atomic nitrogen lines on upper atmosphere composition measurements	23 7419
Muzzio, J.L.R.	Ion cutoff whistlers *[l]*	23 7526

ATMOSPHERIC PRESSURE, DENSITY, AND TEMPERATURE

Lenoir, W.B.	Microwave spectrum of molecular oxygen in the mesosphere	1 361
Mauersberger, K. +	Mass spectrometric determination of neutral constituents in lower thermosphere above Sardinia	3 1071
Hunten, D.M.	Structure of lower atmosphere of Venus *[l]*	3 1093
Brace, L.H. +	Early effects of increasing solar activity upon temperature and density of the 1000-km ionosphere	5 1607
Rao, P.B.	Electron concentrations and electron and ion temperatures in the *F* region for magnetically quiet and disturbed conditions	5 1661
Phinney, R.A. +	Radio occultation method for studying planetary atmospheres	5 1819
Gille, J.C.	Estimating diurnal temperature variation at the stratopause from horizon radiance measurements	6 1863
Mikumo, T.	Atmospheric pressure waves and tectonic deformation associated with the Alaskan earthquake of March 28, 1964	6 2009
Golomb, D. +	Air densities in lower thermosphere from jet radii	9 3017
Emmanuel, C.B.	Radiative equilibrium temperature distribution of atmosphere of Mars	10 3213
Tinsley, B.A.	Temporal variations in geocoronal Balmer alpha	13 4139
Theon, J.S. +	Observations of the southern hemisphere stratosphere and mesophere	14 4475
Johnson, K.W.	Stratospheric warming of 1967-1968 *[l]*	14 4775
Weeks, L.H. +	Molecular oxygen concentrations in upper atmosphere	15 4835
Breiland, J.G.	Some large-scale features of the vertical distribution of atmospheric ozone associated with the thermal structure of the atmosphere	16 5021
Swisher, R.L. +	Lifetimes for low-energy protons in outer radiation zone	17 5665
Norton, R.B. +	Seasonal variation of molecular oxygen near 100 km *[l]*	17 5798
Wand, R.H. +	Radar Thomson scatter observations of temperature and ion-neutral collision frequency in *E* region *[l]*	19 6370
Kasprzak, W.T. +	Study of day-night variations in neutral composition of lower thermosphere	21 6765
Krankowsky, D. +	Mass spectrometric studies of composition of lower thermosphere	23 7291
Hodges, R.R., Jr. +	Lateral transport in planetary exospheres	23 7307

ATMOSPHERIC ABSORPTION AND SCATTERING OF RADIATION (particles or waves)

Weinstock, J.	Magnitudes of ionospheric irregularities from backscatter measurements	1 225
Green, A.E.S. +	Energy loss functions for electrons and protons in planetary gases	1 233
Sorenson, W.R.	Investigation of possible ionospheric heating by hydromagnetic waves	1 287
Lenoir, W.B.	Microwave spectrum of molecular oxygen in the mesosphere	1 361
Meecham, W.C.	Effect of atmospheric wind structure on shorter-period, nuclear-generated infrasound	1 377
Broadfoot, A.L. +	The airglow spectrum, 3100-10,000 A *[l]*	1 426
Knudsen, W.C.	Geographic distribution of *F*-region electrons with about 10-ev energy ϵ	3 841
Lenoir, W.B. +	Observations of microwave emission by molecular oxygen in the stratosphere	4 1119

Gille, J.C.	Estimating diurnal temperature variation at the stratopause from horizon radiance measurements	6 1863
Leventhal, J.S. +	Tritium geophysics from 1961-1962 nuclear tests	8 2715
Matsushima, S.	Vertical distribution of dust to 30 km *[d]*	9 3085
Rosen, J.M.	Vertical distribution of dust to 30 km *[r]*	9 3088
Thompson, M.C., Jr.	Space averages of air and water vapor densities by dispersion for refractive correction of electromagnetic range measurements	10 3097
Carter, C.J. +	Oxygen absorption measurements in the lower atmosphere	10 3113
Anderson, H.R. +	Background cosmic count increase associated with thunderstorms *[d]*	10 3340
Fremouw, E.J. +	Radio-star visibility fades in Alaska near solar minimum	11 3565
Nydal, R.	Further investigation on the transfer of radiocarbon in nature	12 3617
Tinsley, B.A.	Temporal variations in geocoronal Balmer alpha	13 4139
Mentzoni, M.	Ionospheric *G* factor *[l]*	13 4444
Hunten, D.M. +	Upper atmosphere of Venus: Regulus occultation reconsidered *[l]*	13 4446
Wallace, L. +	Dayglow of the oxygen A band	15 4813
Weeks, L.H. +	Molecular oxygen concentrations in upper atmosphere	15 4835
Norton, R.B. +	Seasonal variation of molecular oxygen near 100 km *[l]*	17 5798
Knudsen, W.C. +	F_2 region electron concentration enhancements from inner radiation belt particles	19 6275
Krassovsky, V.I.	Interaction of neutral hydrogen and charged particles in radiation belts: Lyman-alpha emission *[d]*	19 6402
Kondo, Y. +	Interaction of neutral hydrogen and charged particles in radiation belts: Lyman-alpha emission *[r]*	19 6403
Zander, R.	Additional details on the near-infrared reflectivity of laboratory ice clouds	20 6581
Ogawa, M.	Absorption coefficients of O_2 at Lyman-alpha line and its vicinity ¢	21 6759
Grader, R.J. +	X-ray airglow in daytime sky *[l]*	22 7149
Huffman, R.E. +	Effect of absorption by atomic oxygen and atomic nitrogen lines on upper atmosphere composition measurements	23 7419
Kahle, A.B.	Intensity of radiation from Rayleigh-scattering atmosphere	23 7511
Pilipowskyj, J. +	Investigation of stratospheric aerosol by infrared and lidar techniques	24 7553

ATMOSPHERIC ALBEDO TO PARTICLES OR WAVES

Hanson, W.B. +	Photoelectron heating efficiency in ionosphere	3 831
Zander, R.	Additional details on the near-infrared reflectivity of laboratory ice clouds	20 6581

TIDES, WAVES, AND WINDS

Chimonas, G. +	Vertical movement of temperate-zone sporadic *E* layers	1 111
Meecham, W.C.	Effect of atmospheric wind structure on shorter-period, nuclear-generated infrasound	1 377
Woodrum, A. +	Atmospheric tides in the height region 90 to 120 kilometers	2 467
Albee, P.R. +	Spatial model of *F*-region ionospheric traveling disturbance following a low-altitude nuclear explosion	3 1039
Maeda, H. +	Electric currents induced by nonperiodic winds in ionosphere, 1	3 1077
Cloutier, P.A. +	Vector measurement of the midlatitude *Sq* ionospheric current system	5 1771
Gille, J.C.	Estimating diurnal temperature variation at the stratopause from horizon radiance measurements	6 1863
Mikumo, T.	Atmospheric pressure waves and tectonic deformation associated with the Alaskan earthquake of March 28, 1964	6 2009
Murphy, C.H. +	Ionospheric winds over Yuma, Arizona, measured by gun-launched projectiles	9 3005
Dickinson, R.E. +	Dynamics of the neutral gas in the thermosphere for small Rossby number motions ¢	13 4299
Bussian, A.E. +	Search for lunar effect on cosmic rays *[l]*	13 4404
Theon, J.S. +	Observations of the southern hemisphere stratosphere and mesophere	14 4475
Smith, L.B.	Strong thermospheric winds during geomagnetic storm	15 4959
Rosenberg, N.W.	Dynamic model of ionospheric wind profiles	15 4965
Bushman, W.W. +	High-altitude wind measurements from rocket exhaust noise	15 4969
Gupta, J.C.	Semidiurnal lunar harmonic term L_2 in meteorological data *[l]*	15 5004
Webb, W.L.	Source of atmospheric electrification	16 5061
Hodges, R.R., Jr. +	Lateral transport in planetary exospheres	23 7307
Woodrum, A. +	Measurement of magnitude of irregular winds near 100 km *[l]*	23 7535

CONVECTION, DIFFUSION, MIXING, TURBULENCE, AND FALLOUT

Chimonas, G. +	Vertical movement of temperate-zone sporadic *E* layers	1 111
Reddy, C.A. +	Physical significance of E_s parameters f_bE_s, fE_s, and f_0E_s	1 215
Zimmerman, S.P.	Energy balance of turbulence in the upper atmosphere *[d]*	1 452
Justus, C.G.	Energy balance of turbulence in the upper atmosphere *[r]*	1 455
Reddy, C.A. +	Solar cycle variation of blanketing sporadic *E*	5 1641
Klein, M.M.	Spatial diffusion of small particles in an exponential atmosphere	5 1829
Davidson, M.J. +	Spatial coherence of geomagnetic rapid variations	6 2143
Thein, M. +	Radiocerium concentrations in ground-level air after the nuclear explosion of May 9, 1966	10 3129
Fabian, P. +	Stratospheric residence time and interhemispheric mixing of strontium 90 from fallout in rain	12 3611
Yoshikawa, K. +	Fallout particles in the ground-level air from the Chinese nuclear explosion of December 28, 1966	12 3637
Stanley, G.	Anomalous *D*-region partial reflections after high-yield nuclear detonations *[l]*	13 4430
Gudiksen, P.H. +	Mean meridional circulation and eddy diffusion in the transport of trace substances in the lower stratosphere	14 4461
Wallace, L. +	Dayglow of the oxygen A band	15 4813
Rosenberg, N.W.	Dynamic model of ionospheric wind profiles	15 4965
Kroening, J.L. +	Transport of material across the tropopause *[l]*	16 5463
Reddy, C.A.	Physical significance of E_s parameters f_bE_s, fE_s, and f_0E_s 2. Causes of partial reflections from E_s	17 5627

Nagy, A.F. +	Nighttime cooling of protonosphere	19 6259
Hodges, R.R., Jr. +	Lateral transport in planetary exospheres	23 7307

INSTRUMENTS AND TECHNIQUES

Mauersberger, K. +	Mass spectrometric determination of neutral constituents in lower thermosphere above Sardinia	3 1071
Bowyer, C.S. +	Upper limits to the 304- and 584-A night helium glow *[l]*	3 1107
Golomb, D. +	Air densities in lower thermosphere from jet radii	9 3017
Thompson, M.C., Jr.	Space averages of air and water vapor densities by dispersion for refractive correction of electromagnetic range measurements	10 3097
Carter, C.J. +	Oxygen absorption measurements in the lower atmosphere	10 3113
Oster, A.L. +	Method of measuring electron and ion densities in region of 40-80 km *[l]*	13 4421
Wallace, L. +	Dayglow of the oxygen A band	15 4813
Bushman, W.W. +	High-altitude wind measurements from rocket exhaust noise	15 4969

GENERAL OR MISCELLANEOUS

Mikumo, T.	Atmospheric pressure waves and tectonic deformation associated with the Alaskan earthquake of March 28, 1964	6 2009
Donahue, T.M.	Interaction of neutral hydrogen and charged particles in radiation belts *[d]*	13 4455
Kondo, Y. +	Interaction of neutral hydrogen and charged particles in radiation belts *[r]*	13 4457

METEOROLOGY

GENERAL CIRCULATION

Nozumi, Y. +	Prefrontal rain bands located in the warm sector of subtropical cyclones over the ocean	2 487
Young, J.A. +	Radiocarbon from nuclear weapons tests	4 1185
Engler, N.	Wind detail from falling spheres *[l]*	10 3323
Yoshikawa, K. +	Fallout particles in the ground-level air from the Chinese nuclear explosion of December 28, 1966	12 3637
Dickinson, R.E. +	Dynamics of the neutral gas in the thermosphere for small Rossby number motions ¢	13 4299
Theon, J.S. +	Observations of the southern hemisphere stratosphere and mesophere	14 4475
Johnson, K.W.	Stratospheric warming of 1967-1968 *[l]*	14 4775
Smith, L.B.	Strong thermospheric winds during geomagnetic storm	15 4959
Rosenberg, N.W.	Dynamic model of ionospheric wind profiles	15 4965
Rao, G.V.	Some estimates of the modes of kinematic generation of atmospheric baroclinic intensity	16 5039
Mantis, H.T.	Magnitude of terms in the equation for large-scale atmospheric motions	16 5045

CONVECTION, TURBULENCE, AND DIFFUSION

Meecham, W.C.	Effect of atmospheric wind structure on shorter-period, nuclear-generated infrasound	1 377
Zimmerman, S.P.	Energy balance of turbulence in the upper atmosphere *[d]*	1 452
Justus, C.G.	Energy balance of turbulence in the upper atmosphere *[r]*	1 455
Nozumi, Y. +	Prefrontal rain bands located in the warm sector of subtropical cyclones over the ocean	2 487
Hosler, C.R.	Urban-rural climatology of atmospheric radon concentrations	4 1155
Weller, G.	Heat-energy transfer through a four-layer system: Air, snow, sea ice, sea water	4 1209
Cermak, J.E. +	Tower shadow effect	6 1869
Wilkins, E.M.	Energy dissipated by atmospheric eddies in the wake of islands	6 1877
Gudiksen, P.H. +	Mean meridional circulation and eddy diffusion in transport of trace substances in lower stratosphere	14 4461
Rosenberg, N.W.	Dynamic model of ionospheric wind profiles	15 4965
Kroening, J.L. +	Transport of material across the tropopause *[l]*	16 5463
Panofsky, H.A.	Structure constant for index of refraction in relation to the gradient of index of refraction in the surface layer	18 6047
Thompson, M.C., Jr.	Measurements of radio refractive index microstructure of the near-ground atmosphere	20 6425
Bowden, M. +	Effect of radial barrier on convective flow in rotating fluid annulus	22 6887
Zillman, J.W. +	Sea-to-air heat fluxes in the southwest Indian Ocean in summer	22 7057
Woodrum, A. +	Measurement of magnitude of irregular winds near 100 km *[l]*	23 7535

GRAVITY WAVES, TIDES, AND COMPRESSIONAL WAVES

Baker, D.M. +	Waves in the ionosphere produced by nuclear explosions *[l]*	1 448
Woodrum, A. +	Atmospheric tides in the height region 90 to 120 km	2 467
Albee, P.R. +	Spatial model of *F*-region ionospheric traveling disturbance following a low-altitude nuclear explosion	3 1039
Hill, E.L. +	Pressure pulse from a lightning stroke	6 1883
Mikumo, T.	Atmospheric pressure waves and tectonic deformation associated with the Alaskan earthquake of March 28, 1964	6 2009
Murphy, C.H. +	Ionospheric winds over Yuma, Arizona, measured by gun-launched projectiles	9 3005
Dickinson, R.E. +	Dynamics of the neutral gas in the thermosphere for small Rossby number motions ¢	13 4299
Rosenberg, N.W.	Dynamic model of ionospheric wind profiles	15 4965
Gupta, J.C.	Semidiurnal lunar harmonic term L_2 in meteorological data *[l]*	15 5004

Dawson, G.A. +	Pressure pulse from a lightning stroke *[d]*	20 6595
Woodrum, A. +	Measurement of magnitude of irregular winds near 100 km *[l]*	23 7535

BOUNDARY CONDITIONS AND INTERACTIONS

Meecham, W.C.	Effect of atmospheric wind structure on shorter-period, nuclear-generated infrasound	1 377
Byrne, R.J.	Aerodynamic roughness criteria in aeolian sand transport	2 541
Monahan, E.C.	Sea spray as a function of low elevation wind speed	4 1127
Hosler, C.R.	Urban-rural climatology of atmospheric radon concentrations	4 1155
Tanner, C.B. +	Evaporation from unsaturated surfaces: A generalized combination method	4 1299
Wilkins, E.M.	Energy dissipated by atmospheric eddies in the wake of islands	6 1877
Deardorff, J.W.	Dependence of air-sea transfer coefficients on bulk stability	8 2549
Keeling, C.D. +	Carbon dioxide in surface ocean waters, 3. Measurements on Lusiad expedition 1962-1963	14 4529
Keeling, C.D.	Carbon dioxide in surface ocean waters, 4. Global distribution	14 4543
Hazelworth, J.B.	Water temperature variations resulting from hurricanes	16 5105
Barnett, T.P. +	Overshoot effect in wind-generated waves	22 6879
Zillman, J.W. +	Sea-to-air heat fluxes in the southwest Indian Ocean in summer	22 7057

CLIMATOLOGY

Hosler, C.R.	Urban-rural climatology of atmospheric radon concentrations	4 1155
Sagan, C. +	Elevation differences on Mars	4 1373
Mantis, H.T.	Magnitude of terms in the equation for large-scale atmospheric motions	16 5045

STORMS

Jones, D.L.	A dominant 200-hertz peak in the acoustic spectrum of thunder *[d]*	14 4776
Hazelworth, J.B.	Water temperature variations resulting from hurricanes	16 5105
Loeb, L.B.	Confirmation and extension of a proposed mechanism of the stepped leader lightning stroke	18 5813
Colgate, S.A.	Electrical heating of a tornado vortex *[l]*	18 6121

ELECTRICAL PHENOMENA

Uman, M.A. +	Time interval between lightning strokes and initiation of dart leaders	2 497
Pruppacher, H.R. +	Electrical effects that accompany the spontaneous growth of ice in supercooled aqueous solutions	2 571
Jones, R.C.	Return stroke core diameter *[l]*	2 809
Dawson, G.A. +	Acoustic output of a long spark *[l]*	2 815
Mackerras, D.	A comparison of discharge processes in cloud and ground lightning flashes	4 1175
Vonnegut, B.	Mass loss and distortion of freely falling water drops in an electric field *[d]*	4 1501
Hill, E.L. +	Pressure pulse from a lightning stroke	6 1883
Oetzel, G.N.	Computation of the diameter of a lightning return stroke	6 1889
Hill, R.D.	Analysis of irregular paths of lightning channels	6 1897
Bunn, C.C.	Application of electric field change measurements to calibration of a lightning flash counter	6 1907
Kohl, D.A.	Fair weather electric field noise within the austausch layer	6 1913
Atkinson, W.R. +	Analytical approximation of numerically determined collision efficiencies of hydrometeors	6 2035
Wilkins, E.M. +	Threshold conditions for vortex-stabilized electrical discharges in atmosphere	8 2559
Jones, D.L. +	Shock wave from a lightning discharge	10 3121
Krider, E.P. +	Peak power and energy dissipation in a single-stroke lightning flash *[l]*	10 3335
Bricard, J. +	Formation and evolution of nuclei of condensation that appear in air initially free of aerosols	14 4487
Jones, D.L.	A dominant 200-hertz peak in the acoustic spectrum of thunder *[d]*	14 4776
Loeb, L.B.	Confirmation and extension of a proposed mechanism of the stepped leader lightning stroke	18 5813
Nelson, L.N.	Magnetographic measurements of charge transfer in the lightning flash	18 5967
Colgate, S.A.	Electrical heating of a tornado vortex *[l]*	18 6121
Sartor, J.D. +	Charge transfer between uncharged water drops in free fall in an electric field	20 6415
Dawson, G.A. +	Pressure pulse from a lightning stroke *[d]*	20 6595
Orville, R.E.	Spectrum of the lightning stepped leader	22 6999

INTERACTION OF ATMOSPHERE WITH ELECTROMAGNETIC WAVES

Lenoir, W.B.	Microwave spectrum of molecular oxygen in the mesosphere	1 361
Gilinsky, V. +	Development of a radio signal from nuclear explosion in atmosphere	1 405
Lenoir, W.B. +	Observations of microwave emission by molecular oxygen in stratosphere	4 1119
Phinney, R.A. +	Radio occultation method for studying planetary atmospheres	5 1819
Doherty, R.H.	Importance of associative detachment and dissociative attachment in lower ionosphere as shown by LF radio measurements	7 2429
Carter, C.J. +	Oxygen absorption measurements in the lower atmosphere	10 3113
Panofsky, H.A.	The structure constant for index of refraction in relation to gradient of index of refraction in surface layer	18 6047
Clapp, R.E.	Development of radio signal from nuclear explosion in atmosphere *[d]*	19 6395
Peebles, G.H.	Development of a radio signal from nuclear explosion in atmosphere *[r]*	19 6401
Thompson, M.C., Jr. +	Measurements of radio refractive index microstructure of the near-ground atmosphere	20 6425
Dave, J.V. +	Effect of stratospheric dust on color of twilight sky	22 6897
Brook, M. +	Fluctuating radar echo: Modulation by vibrating drops *[l]*	22 7137

H_2O IN THE ATMOSPHERE (humidity, clouds, precipitation)

Vonnegut, B.	Mass loss and distortion of freely falling water drops in an electric field *[d]*	4 1501
Atkinson, W.R. +	Analytical approximation of numerically determined collision efficiencies of hydrometeors	6 2035
Mulligan, J.C.	Model for heat transfer in frost and snow	8 2663
Thompson, M.C., Jr.	Space averages of air and water vapor densities by dispersion for refractive correction of electromagnetic range measurements	10 3097
Singer, S.F. +	Microwave detection of precipitation over the surface of the ocean *[l]*	10 3324
Beard, K.V. +	Experimental test of theoretically calculated collision efficiencies of cloud drops	20 6407
Sartor, J.D. +	Charge transfer between uncharged water drops in free fall in an electric field	20 6415
Brook, M. +	Fluctuating radar echo: Modulation by vibrating drops *[l]*	22 7137
Buettner, K.J.K. +	Microwave detection of precipitation over surface of ocean *[d]*	22 7145
Singer, S.F. +	Microwave detection of precipitation over surface of ocean *[r]*	22 7146

PARTICLES AND AEROSOLS

Rosen, J.	Simultaneous dust and ozone soundings over North and Central America	2 479
Monahan, E.C.	Sea spray as a function of low elevation wind speed	4 1127
Bhandari, N. +	Cosmic dust in the stratosphere	5 1837
Lindeken, C.L.	Determination of the degree of equilibrium between radon 222 and its daughters in atmosphere by means of alpha-pulse spectroscopy *[l]*	8 2823
Matsushima, S.	Vertical distribution of dust to 30 km *[d]*	9 3085
Rosen, J.M.	Vertical distribution of dust to 30 km *[r]*	9 3088
Berg, T.G.O. +	Investigation of the kinetics of condensation	10 3103
Fabian, P. +	Stratospheric residence time and interhemispheric mixing of strontium 90 from fallout in rain	12 3611
Yoshikawa, K. +	Fallout particles in the ground-level air from the Chinese nuclear explosion of December 28, 1966	12 3637
Oster, A.L. +	Method of measuring electron and ion densities in region of 40-80 km *[l]*	13 4421
Gudiksen, P.H. +	Mean meridional circulation and eddy diffusion in the transport of trace substances in the lower stratosphere	14 4461
Bricard, J. +	Formation and evolution of nuclei of condensation that appear in air initially free of aerosols	14 4487
Cadle, R.D. +	Particles in fume from the 1967 Kilauea eruption *[l]*	14 4780
Garrett, W.D.	The influence of monomolecular surface films on production of condensation nuclei from bubbled sea water	16 5145
McClaine, L.A. +	Volcanic smoke clouds	16 5235
Dave, J.V. +	Effect of stratospheric dust on color of twilight sky	22 6897
Pilipowskyj, S. +	Investigation of stratospheric aerosol by infrared and lidar techniques	24 7553

IONIC INTERACTIONS AND PROCESSES

Jones, R.C.	Return stroke core diameter *[l]*	2 809
Stebbings, R.F. +	Low-energy collisions between $O^+(^4S)$ and H(1*s*)	3 1035
Keller, G.E.	Use of ionic mobilities for measurements in lower ionosphere	11 3483
Oster, A.L. +	Method of measuring electron and ion densities in region of 40-80 km *[l]*	13 4421
Bricard, J. +	Formation and evolution of nuclei of condensation that appear in air initially free of aerosols	14 4487
Wand, R.H. +	Radar Thomson scatter observations of temperature and ion-neutral collision frequency in *E* region *[l]*	19 6370

CHEMICAL COMPOSITION AND CHEMICAL INTERACTIONS

Ghosh, S.N.	Distributions and lifetimes of N and NO between 100 and 280 km	1 309
Begemann, F. +	Isotopic composition of atmospheric hydrogen	4 1139
Begemann, F. +	Tritium and deuterium in atmospheric methane	4 1149
Haines, A. +	Tritium content of atmospheric methane and ethane	4 1167
Reed, E.I.	Night measurement of mesospheric ozone by observations of ultraviolet airglow	9 2951
Keller, G.E.	Use of ionic mobilities for measurements in lower ionosphere	11 3483
Gow, A.J.	Electrolytic conductivity of snow and glacier ice from Antarctica and Greenland	12 3643
Bricard, J. +	Formation and evolution of nuclei of condensation that appear in air initially free of aerosols	14 4487
Keeling, C.D. +	Concentration of atmospheric carbon dioxide at 500 and 700 mb	14 4511
Cadle, R.D. +	Particles in the fume from the 1967 Kilauea eruption *[l]*	14 4780
Lovill, J.E. +	The vertical distribution of ozone over the San Francisco Bay area	16 5073
Williston, S.H.	Mercury in the atmosphere	22 7051

INSTRUMENTS AND TECHNIQUES

Randhawa, J.S.	Mesospheric ozone measurements during a solar eclipse	2 493
Pond, S.	Some effects of buoy motion on measurements of wind speed and stress	2 507
Senn, H.V. +	A new, low-cost multi-level iso-echo-contour for weather-radar use	4 1201
Cermak, J.E. +	Tower shadow effect	6 1869
Bunn, C.C.	Application of electric field change measurements to calibration of lightning flash counter	6 1907
Kohl, D.A.	Fair weather electric field noise within electric field noise within the austausch layer	6 1913
Berg, T.G.O. +	Investigation of the kinetics of condensation	10 3103
Singer, S.F. +	Microwave detection of precipitation over the surface of ocean *[l]*	10 3324
Thompson, M.C., Jr. +	Measurements of radio refractive index microstructure of the near-ground atmosphere	20 6425

Buettner, K.J.K. +	Microwave detection of precipitation over surface of ocean *[d]*	22 7145
Singer, S.F. +	Microwave detection of precipitation over surface of ocean *[r]*	22 7146

GENERAL OR MISCELLANEOUS

Berg, T.G.O. +	Investigation of kinetics of condensation	10 3103
Engler, N.	Wind detail from falling spheres *[l]*	10 3323
Mantis, H.T.	Magnitude of terms in equation for large-scale atmospheric motions	16 5045
Nelson, L.N.	Magnetographic measurements of charge transfer in the lightning flash .	18 5967

SOLID TERRESTRIAL SURFACES (topography, erosion, deposition, remote sensing of surface features). Also see Planetology.

Byrne, R.J.	Aerodynamic roughness criteria in aeolian sand transport	2 541
Betinis, E.J.	Approximate backscatter of electromagnetic waves from an inhomogeneous lunar surface	2 657
Horn, D.R. +	Correlation between acoustical and other physical properties of deep-sea cores	6 1939
Sirounian, V.	Effect of temperature, angle of observation, salinity, and thin ice on microwave emission of water	14 4481
Posey, C.J.	Proposed mechanism for sediment entrainment by turbulent flows *[d]*	14 4778
Sutherland, A.J.	Proposed mechanism for sediment entrainment by turbulent flows *[r]*	14 4779
Harbison, R.N.	Geology of De Soto canyon	16 5175
Hunt, G.R. +	Spectral features in the infrared emission from particulate surfaces	18 6039
Griggs, M.	Emissivities of natural surfaces in 8- to 14- micron spectral region	24 7545
Tyler, G.L.	Oblique-scattering radar reflectivity of lunar surface	24 7609

HYDROLOGY

Pruppacher, H.R. +	Electrical effects that accompany spontaneous growth of ice in supercooled aqueous solutions	2 571
Hoare, R.A.	Thermohaline convection in Lake Vanda, Antarctica	2 607
Robinson, E.S.	Seismic wave propagation on a heterogeneous polar ice sheet	2 739
Weller, G.	Heat-energy transfer through a four-layer system: Air, snow, sea ice, sea water	4 1209
Tanner, C.B. +	Evaporation from unsaturated surfaces: A generalized combination method	4 1299
Brace, W.F. +	Permeability of granite under high pressure	6 2225
Csanady, G.T.	Wind-driven summer circulation in the Great Lakes	8 2579
Mulligan, J.C.	Model for heat transfer in frost and snow	8 2663
Weertman, J.	Comparison between measured and theoretical temperature profiles of theCamp Century, Greenland, borehole	8 2691
Gow, A.J.	Electrolytic conductivity of snow and glacier ice from Antarctica and Greenland	12 3643
Philip, J.R.	Unsteady flow in unsaturated soil-water movement from a cylindrical source *[d]*	12 3968
Singh, R. +	Unsteady flow in unsaturated soil-water movement from a cylindrical source *[r]*	12 3971
Posey, C.J.	Proposed mechanism for sediment entrainment by turbulent flows *[d]*	14 4778
Sutherland, A.J.	Proposed mechanism for sediment entrainment by turbulent flows *[r]*	14 4779
Yeh, W.W. +	Moisture movement in a horizontal soil column under influence of applied pressure	16 5151
Clacy, G.R.T.	Geothermal ground noise amplitude and frequency spectra in New Zealand volcanic region	16 5377
Csanady, G.T.	Motions in a model Great Lake due to a suddenly imposed wind	20 6435
Malone, F.D.	An analysis of current measurements in Lake Michigan	22 7065
Pollard, M.	Floods according to an ancient Egyptian scientific chronicle *[l]*	22 7158
Huang, J.H. +	Fluid flow in porous media — diffusion and flow of nitrogen gas in natural rocks	24 7685

OCEANOGRAPHY

DISTRIBUTIONS AND WATER MASSES

Duncan, C.P.	An eddy in subtropical convergence southwest of South Africa	2 531
Horibe, Y. +	Deuterium content as a parameter of water mass in the ocean	4 1239
Johnson, R.H. +	Geographic variation of Sofar speed and axis depth in the Pacific Ocean	14 4695
Hamm, D.P. +	Experiments in oceanic forecasting for the advective region by numerical modeling, 1. The model	16 5081
Baer, L. +	Experiments in oceanic forecasting for the advective region by numerical modeling, 2. Gulf of Mexico	16 5091
Cooper, J.W. +	Regularly spaced steps in the main thermocline near Bermuda	18 5849

CIRCULATION, TURBULENCE, AND DIFFUSION

Duncan, C.P.	An eddy in subtropical convergence southwest of South Africa	2 531
Hoare, R.A.	Thermohaline convection in Lake Vanda, Antarctica	2 607
Pochapsky, T.E.	Oceanic current and temperature gradients at 12 degrees N, 27 degrees W	4 1221
Foster, T.D.	Haline convection induced by the freezing of sea water	6 1933

Csanady, G.T.	Wind-driven summer circulation in the Great Lakes	8 2579
Cairns, J.L.	Thermocline strength fluctuations in coastal waters	8 2591
Costin, J.M.	Direct current measurements in the Antilles current *[I]*	10 3341
Miller, R.L.	Experimental determination of run-up of undular and fully developed bores	14 4497
Hamm, D.P. +	Experiments in oceanic forecasting for the advective region by numerical modeling, 1. The model	16 5081
Baer, L. +	Experiments in oceanic forecasting for the advective region by numerical modeling, 2. Gulf of Mexico	16 5091
Mazeika, P.A.	Eastward flow within the South Equatorial Current in the eastern South Atlantic	18 5819
Lachenbruch, A.H. +	Heat flow and water temperature fluctuations in the Denmark Strait	18 5829
Cooper, J.W. +	Regularly spaced steps in the main thermocline near Bermuda	18 5849
Csanady, G.T.	Motions in a model Great Lake due to a suddenly imposed wind	20 6435
Bowden, M. +	Effect of radial barrier on convective flow in rotating fluid annulus	22 6887
Hamon, B.V.	Spectrum of sea level at Lord Howe Island in relation to circulation	22 6925
Malone, F.D.	An analysis of current measurements in Lake Michigan	22 7065
Williams, R.B.	Horizontal temperature variations in the upper water of the open ocean	22 7127
Gallagher, J.J.	Direct current measurements in the Antilles current *[d]*	22 7148

PHYSICAL AND CHEMICAL PROPERTIES OF SEAWATER

Bennett, J.H. +	On iodine abundances in deep-sea sediments *[I]*	6 2302
Keeling, C.D. +	Carbon dioxide in surface ocean waters, 3. Measurements on Lusiad expedition 1962-1963	14 4529
Keeling, C.D.	Carbon dioxide in surface ocean waters, 4. Global distribution	14 4543
Johnson, R.H. +	Geographic variation of Sofar speed and axis depth in the Pacific Ocean	14 4695
Garrett, W.D.	The influence of monomolecular surface films on the production of condensation nuclei from bubbled sea water	16 5145
Kester, D.R. +	Oxygen saturation in the surface waters of the northeast Pacific Ocean	16 5421
Beardsley, G.F., Jr.	The polarization of submarine daylight at near-asymptotic depths	20 6449

SURFACE WAVES, TIDES, AND SEA LEVEL

Barnett, T.P.	Generation, dissipation, and prediction of ocean wind waves	2 513
Mooers, C.N.K. +	Continental shelf waves off Oregon	2 549
Pidgeon, V.W	Doppler dependence of radar sea return	4 1333
Nowroozi, A.A. +	Deep ocean current and its correlation with ocean tide off coast of northern California	6 1921
Bowen, A.J. +	Wave 'set-down' and set-up	8 2569
Galvin, C.J., Jr.	Breaker type classification on three laboratory beaches	12 3651
Miyata, M. +	Sea level observations at two nearby stations *[I]*	12 3965
Miller, R.L.	Experimental determination of run-up of undular and fully developed bores	14 4497
Mei, C.C. +	An asymptotic theory for water waves on beaches of mild slope	14 4555
Schwartz, R.J. +	Onset of wind-driven waves	16 5133
Mooers, C.N.K.	Gerstner wave's Fourier decomposition and related identities	18 5843
Le Méhauté, B.	Mass transport in cnoidal waves	18 5973
Barakat, R. +	Nonlinear periodic capillary-gravity waves on a fluid of finite depth	20 6545
Barnett, T.P. +	Overshoot effect in wind-generated waves	22 6879
Hamon, B.V.	Spectrum of sea level at Lord Howe Island in relation to circulation	22 6925
Hardy, J.R.	Grid and projection problems in numerical calculation of wave refraction	22 7083

INTERNAL WAVES

Roden, G.I.	Spectral analysis and interpretation of salinity-temperature-depth records	2 535
Pochapsky, T.E.	Oceanic current and temperature gradients at 12 degrees N, 27 degrees W	4 1221
Cairns, J.L.	Thermocline strength fluctuations in coastal waters	8 2591
Malone, F.D.	An analysis of current measurements in Lake Michigan	22 7065
Williams, R.B.	Horizontal temperature variations in the upper water of the open ocean	22 7127

BOUNDARY LAYER AND EXCHANGE PROCESSES

Pond, S.	Some effects of buoy motion on measurements of wind speed and stress	2 507
Barnett, T.P.	Generation, dissipation, and prediction of ocean wind waves	2 513
Monahan, E.C.	Sea spray as a function of low elevation wind speed	4 1127
Young, J.A. +	Radiocarbon from nuclear weapons tests	4 1185
Weller, G.	Heat-energy transfer through a four-layer system: Air, snow, sea ice, sea water	4 1209
Untersteiner, N.	Natural desalination and equilibrium salinity profile of perennial sea ice	4 1251
Pidgeon, V.W.	Doppler dependence of radar sea return	4 1333
Deardorff, J.W.	Dependence of air-sea transfer coefficients on bulk stability	8 2549
Bowen, A.J. +	Wave 'set-down' and set-up	8 2569
Northrop, J. +	Effect of near-source bottom conditions on long-range propagation in the ocean	12 3905
Miyata, M. +	Sea level observations at two nearby stations *[I]*	12 3965
Sirounian, V.	Effect of temperature, angle of observation, salinity, and thin ice on microwave emission of water	14 4481
Keeling, C.D. +	Carbon dioxide in surface ocean waters, 3. Measurements on Lusiad expedition 1962-1963	14 4529
Keeling, C.D.	Carbon dioxide in surface ocean waters, 4. Global distribution	14 4543
Hazelworth, J.B.	Water temperature variations resulting from hurricanes	16 5105
Schwartz, R.J. +	Onset of wind-driven waves	16 5133

Garrett, W.D.	Influence of monomolecular surface films on the production of condensation nuclei from bubbled sea water	16 5145
Kester, D.R. +	Oxygen saturation in the surface waters of the northeast Pacific Ocean	16 5421
Lachenbruch, A.H. +	Heat flow and water temperature fluctuations in the Denmark Strait	18 5829
Barnett, T.P. +	Overshoot effect in wind-generated waves	22 6879
Zillman, J.W. +	Sea-to-air fluxes in the southwest Indian Ocean in summer	22 7057
Williams, R.B.	Horizontal temperature variations in the upper water of the open ocean	22 7127

MARINE GEOLOGICAL PROCESSES (beaches, turbidity currents, sedimentation)

Schreiber, B.C.	Sound velocity in deep sea sediments	4 1259
Bowen, A.J. +	Wave 'set-down' and set-up	8 2569
Le Pichon, X. +	Deep-sea sediment velocity determination made while reflection profiling	8 2597
Houtz, R. +	Velocity of deep-sea sediments from sonobuoy data	8 2615
Deuser, W.G.	Post depositional changes in the oxygen isotope ratios of pleistocene foraminifer tests in the Red Sea	10 3311
Galvin, C.J., Jr.	Breaker type classification on three laboratory beaches	12 3651
Northrop, J. +	Effect of near-source bottom conditions on long-range sound propagation in the ocean	12 3905
Merifield, P.M. +	Sand waves and early earth-moon history	14 4767
Harbison, R.N.	Geology of De Soto canyon	16 5175
Harrison, W.	Empirical equation for longshore current velocity	22 6929

SEA ICE

Weller, G.	Heat-energy transfer through a four-layer system: Air, snow, sea ice, sea water	4 1209
Untersteiner, N.	Natural desalination and equilibrium salinity profile of perennial sea ice	4 1251
Foster, T.D.	Haline convection induced by the freezing of sea water	6 1933

UNDERWATER SOUND

Northrup, J. +	Effect of near-surface bottom conditions on long-range sound propagation in ocean	12 3905
Johnson, R.H. +	Geographic variation of Sofar speed and axis depth in the Pacific Ocean	14 4695
Weinstein, M.S.	Spectra of acoustic and seismic signals generated by underwater explosions *[l]*	16 5473
Browning, D.G. +	Velocity and temperature profiles in Lake Superior *[l]*	18 6122

INSTRUMENTS AND TECHNIQUES

Pond, S.	Some effects of buoy motion on measurements of wind speed and stress	2 507
Pidgeon, V.W.	Doppler dependence of radar sea return	4 1333
Nowroozi, A.A. +	Deep ocean current and its correlation with ocean tide off coast of northern California	6 1921
Latham, G.V. +	Waves, weather, and ocean bottom microseisms	12 3945
Sirounian, V.	Effect of temperature, angle of observation, salinity, and thin ice on microwave emission of water	14 4481
Adamo, L.C. +	Icosahedral-gnomonic projection and grid of the world ocean for wave studies	16 5125
Schwartz, R.J. +	Onset of wind-driven waves	16 5133
Lachenbruch, A.H. +	Heat flow and water temperature fluctuations in Denmark Strait	18 5829
Mooers, C.N.K.	Gerstner wave's Fourier decomposition and related identities	18 5843
Gallagher, J.J.	Direct current measurements in Antilles current *[d]*	22 7148

GENERAL OR MISCELLANEOUS

Northrop, J.	Submarine topographic echoes from Chase V	12 3909
Miller, R.L.	Experimental determination of run-up of undular and fully developed bores	14 4497
Beardsley, G.F., Jr.	The polarization of submarine daylight at near-asymptotic depths	20 6449
Harrison, W.	Empirical equation for longshore current velocity	22 6929
Hardy, J.R.	Grid and projection problems in numerical calculations of wave refraction	22 7083

EARTH'S MAIN MAGNETIC FIELD (geomagnetic field)

SPATIAL VARIATIONS (all harmonics and anomalies)

Schimke, G.R. +	Geophysical description of a Pacific Ocean seamount	2 559
Frank, F.C.	A peculiar property of geomagnetic field	2 677
Bassinger, B.G.	Marine magnetic study in the northeast Chukchi Sea	2 683
Smith, T.E.	Aeromagnetic measurements in Dixie Valley, Nevada	4 1321
Zmuda, A.J. +	Scalar magnetic intensity at 1100 km in middle and low latitudes	7 2495
Heuring, F.T. +	Evaluation of geomagnetic harmonic series for 1100-km altitude	7 2505
Avery, O.E. +	An aeromagnetic survey of the Norwegian Sea	14 4583
Chamalaun, F.H.	Paleomagnetism of Reunion Island and its bearing on secular variation	14 4647
Brakl, J. +	Interpretation of a magnetic anomaly on the continental rise off Cape Hatteras	16 5313
Francheteau, J. +	Geophysical description of a Pacific Ocean seamount *[d]*	24 7713
Schimke, G.R. +	Geophysical description of a Pacific Ocean seamount *[r]*	24 7716

TIME VARIATIONS, PALEOMAGNETISM

McElhinny, M.W. +	Paleomagnetism of some Carboniferous glacial varves from central Africa	2 689
Roy, J.L. +	Stability of the magnetization of the Hurley Creek formation	2 697
Verma, R.K. +	Paleomagnetism of Kamthi sandstones of Upper Permian age from Godavary Valley, India	2 703
Briden, J.C.	Paleomagnetism of the Ntonya ring structure, Malawi	2 725
Westcott, M.F. +	Magnetic properties of some beach sand ilmenite particles	4 1269
Brock, A.	Paleomagnetism of the Nuanetsi igneous province and its bearing upon the sequence of Karoo igneous activity in southern Africa	4 1389
Dalrymple, G.B. +	Paleomagnetism and potassium-argon ages of some volcanic rocks from the Rio Grande Gorge *[d]*	4 1502
Ozima, M. +	Paleomagnetism and potassium-argon ages of some volcanic rocks from the Rio Grande Gorge *[r]*	4 1504
Vincenz, S.A.	Partial self-reversal in Keweenawan rocks 2. Magnetization of Portage Lake lavas	8 2729
Vincenz, S.A. +	Self-reversal in Keweenawan rocks 2. Magnetization of Upper Keweenawan lavas and sediments and of Lower Keweenawan dikes	8 2753
Carmichael, C.M. +	Paleomagnetism of the Late Triassic, North Mountain basalt of Nova Scotia	8 2811
Larochelle, A.	Paleomagnetism of the Monteregian hills	10 3239
Cox, A.	Lengths of geomagnetic polarity intervals	10 3247
Evans, M.E.	Magnetization of dikes: Paleomagnetism of the Widgiemooltha dike suite, Western Australia	10 3261
Zijderveld, J.D.A.	Natural remanent magnetizations of some intrusive rocks from the Sør Rondane Mountains, Queen Maud Land, Antarctica	12 3773
Strangway, D.W. +	A possible cause of high magnetic stability in volcanic rocks	12 3787
Chamalaun, F.H.	Paleomagnetism of Reunion Island and its bearing on secular variation	14 4647
Runcorn, S.K.	Virtual geomagnetic poles *[l]*	18 6138
Doell, R.R. +	Virtual geomagnetic poles *[r]*	18 6139
Knowles, R.R. +	Paleomagnetic results from the Mauch Chunk formation	20 6515
Jones, D.L.	Paleomagnetism of the Premier Mine kimberlite	22 6937
Strangway, D.W. +	Magnetic paleointensity studies on a recent basalt from Flagstaff, Arizona	22 7031

SPATIAL VARIATIONS ATTRIBUTED TO SEAFLOOR SPREADING

Ozima, M. +	Potassium-argon ages and magnetic properties of some dredged submarine basalts	2 711
van Andel, T.H. +	Mid-Atlantic ridge between 22 degrees and 23 degrees N and the tectonics of mid-ocean rises	4 1279
Pitman, W.C., III +	Magnetic anomalies in the Pacific and sea floor spreading	6 2069
Dickson, G.O. +	Magnetic anomalies in South Atlantic and ocean floor spreading	6 2087
Le Pichon, X. +	Magnetic anomalies in the Indian Ocean and sea-floor spreading	6 2101
Heirtzler, J.R. +	Marine magnetic anomalies, geomagnetic field reversals, and motions of the ocean floor and continents	6 2119
Cox, A.	Lengths of geomagnetic polarity intervals	10 3247
Raff, A.D.	Sea-floor spreading – another rift	12 3699
Avery, O.E. +	An aeromagnetic survey of the Norwegian Sea	14 4583
Hayes, D.E. +	Magnetic anomalies and their relation to Aleutian Island arc	14 4637
Luyendyk, B.P. +	Lineations of magnetic anomalies in the NE Pacific observed near ocean floor	18 5951
Pitman, W.C., III +	Sea-floor spreading in the Gulf of Alaska	20 6571
Godby, E.A. +	Aeromagnetic profiles across Reykjanes ridge SW of Iceland	24 7637

TIME VARIATIONS, DIURNAL TO SECULAR

McDonald, K.L. +	Recent trends in earth's magnetic field	6 2057
Zmuda, A.J. +	Scalar magnetic intensity at 100 km in middle and low latitudes	7 2495
Cox, A.	Lengths of geomagnetic polarity intervals	10 3247
Chamalaun, F.H.	Paleomagnetism of Réunion Island and its bearing on secular variation	14 4647

INTERACTIONS BETWEEN EXTERIOR SOURCES AND INTERIOR PROPERTIES (magnetotelluric effects)

Murphy, B.L. +	Antipodal effect due to magnetohydrodynamic wave propagation after Starfish detonation *[l]*	5 1858
Morrison, H.F. +	Analysis of earth impedances using magnetotelluric fields	8 2769
Currie, R.G.	Geomagnetic spectrum of internal origin and lower mantle conductivity	8 2779
Hermance, J.F. +	Deep electrical structure under Iceland	12 3797
Eckhardt, D.H.	Theory and interpretation of electromagnetic impedance of earth	16 5317
Anderssen, R.S.	Note on conductivity models for earth	20 6535
Rikitake, T.	Resonant behavior of electric currents electromagnetically induced within a nonuniform sheet of conductor	22 7019

INSTRUMENTS AND TECHNIQUES

Graham, J.W.	Elimination of static charges from spinner magnetometers *[l]*	14 4788
Barrett, D.L.	Frequency modulation of shipborne proton magnetometer signal due to hydrodynamic instability of towed vehicle	16 5327
Nelson, L.N.	Magnetographic measurements of charge transfer in lightning flash	18 5967

GENERAL OR MISCELLANEOUS

Vincenz, S.A.	Partial self-reversal in Keweenawan rocks 1. Magnetization of Portage Lake lavas	8 2729
Vincenz, S.A. +	Phenomenon of partial self-reversal in Keweenawan rocks 2. Magnetization of Upper Keweenawan lavas and sediments and of Lower Keweenawan dikes	8 2753
Stern, D.	Euler potentials and geomagnetic drift shells	13 4373
Lilley, F.E.M. +	Elastic wave motion and nonuniform magnetic field in electrical conductors	20 6527
Anderssen, R.S.	Note on conductivity models for earth	20 6535

GEODESY AND GRAVITY

Willman, J.F. +	Accuracy of satellite Doppler data for ionospheric study, navigation, and geodesy	1 385
Schimke, G.R. +	Geophysical description of Pacific Ocean seamount	2 559
James, D.E. +	Crustal structure of Middle Atlantic States	6 1983
Harrison, J.C. +	Performance of LaCoste-Romberg shipboard gravity meters	6 2163
Schwiderski, E.W.	Mantle convection and crustal tectonics inferred from a satellite's orbit: A different view of sea-floor spreading *[l]*	8 2828
Thompson, M.C., Jr.	Space averages of air and water vapor densities by dispersion for refractive correction of electromagnetic range measurements	10 3097
Newton, R.R.	Experimental evidence for a secular decrease in gravitational constant *G*	12 3765
Ryall, A. +	Crustal structure of southern Hawaii related to volcanic processes in upper mantle	14 4561
Wagner, C.A.	Determination of low-order resonant gravity harmonics from drift of two Russian 12-hour satellites	14 4661
Harlan, R.B.	Eotvos corrections for airborne gravimetry	14 4675
Bowin, C.O.	Geophysical study of Cayman trough	16 5159
Khan, M.A.	Re-evaluation of theory for hydrostatic figure of earth	16 5335
Hatherton, T. +	Gravity profiles across Alpine fault, New Zealand	16 5343
Bender, P.L. +	Satellite geodesy using laser range measurements only	16 5353
Meister, L.J. +	Surface strain changes and strain energy release in Dixie Valley-Fairview Peak area, Nevada	18 5981
Rapp, R.H.	Gravitational potential of earth determined from combination of satellite, observed, and model anomalies	20 6555
Badekas, J. +	Interpolation of vertical deflection from horizontal gravity gradients	22 6869
Tryggvason, E.	Measurement of surface deformation in Iceland by precision leveling	22 7039
McConnell, R.K., Jr.	Viscosity of mantle from relaxation time spectra of isostatic adjustment	22 7089
Wagner, C.A.	Combined solution for low degree longitude harmonics of gravity	24 7651
Francheteau, J. +	Geophysical description of a Pacific Ocean seamount *[d]*	24 7713
Schimke, G.R. +	Geophysical description of a Pacific Ocean seamount *[r]*	24 7716

GEOCHEMISTRY

GEOCHRONOLOGY (age determinations by radioactive processes)

Dalrymple, G.B. +	Paleomagnetism and potassium-argon ages of some volcanic rocks from Rio Grande Gorge, N.M. *[d]*	4 1502
Ozima, M. +	Paleomagnetism and potassium-argon ages of some volcanic rocks from Rio Grande Gorge, N.M. *[r]*	4 1504
Megrue, G.H.	Rare gas chronology of hypersthene achondrites and pallasites	6 2027
Ku, T.	Protactinium 231 method of dating corals from Barbados Island	6 2271
Peterman, Z.E. +	Age of precambrian events in northeastern Front Range, Colorado	6 2277
Carmichael, C.M. +	Paleomagnetism of Late Triassic, North Mountain basalt of Nova Scotia	8 2811
Tanaka, S. +	Search for aluminum 26 induced by cosmic-ray muons in terrestrial rock	10 3303
Sabu, D.D. +	Fission xenon in chondrites	12 3957
Dymond, J.R. +	Age of cobb seamount *[l]*	12 3977
Funkhouser, J.G. +	Radiogenic helium and argon in ultramafic inclusions from Hawaii	14 4601
Brooks, C.	Relationship between feldspar alteration and precise post-crystallization movement of rubidium and strontium isotopes in a granite	14 4751
Rancitelli, L.A. +	Potassium: argon problems in iron meteorites	16 5429
Brooks, C. +	A two-error regression treatment and its application to Rb/Sr and initial strontium 87/strontium 86 ratios of granitic rocks	18 6071
Fireman, E.L. +	Rare gases in phases of the Deelfontein meteorite	18 6111
Keil, K.	Mineralogical and chemical relationships among enstatite chondrites	22 6945
Krogh, T.E. +	Strontium isotope variation and whole-rock isochron studies, Grenville Province of Ontario	22 7107
Gopalan, K. +	Rubidium-strontium age of hypersthene (L) chrondrites	22 7133

CHEMISTRY OF THE ATMOSPHERE

Ghosh, S.N.	Distributions and Lifetimes of N and NO between 100 and 280 km	1 309
Begemann, F. +	Isotopic composition of atmospheric hydrogen	4 1139
Begemann, F. +	Tritium and deuterium in atmospheric methane	4 1149
Young, J.A. +	Radiocarbon from nuclear weapons tests	4 1185
Lindeken, C.L.	Determination of the degree of equilibrium between radon 222 and its daughters in the atmosphere by means of alpha-pulse spectroscopy *[l]*	8 2823
Keeling, C.D. +	Concentration of atmospheric carbon dioxide at 500 and 700 mb	14 4511
Keeling, C.D. +	Carbon dioxide in surface ocean waters, 3. Measurements on Lusiad expedition 1962-1963	14 4529

Keeling, C.D.	Carbon dioxide in surface ocean waters, 4. Global distribution	14 4543
Gulledge, I.S. +	Intensity profiles of the 6300-A and 5577-A O I lines in night airglow	17 5535
Ferguson, E.E. +	Metal ion chemistry of earth's atmosphere	19 6215
Axford, W.I.	Polar wind and terrestrial helium budget *[I]*	21 6855

CHEMISTRY OF BODIES OF WATER

Young, J.A. +	Radiocarbon from nuclear weapons tests	4 1185
Horibe, Y. +	Deuterium content as a parameter of water mass in the ocean	4 1239
Bennett, J.H. +	On iodine abundances in deep-sea sediments *[I]*	6 2302

CHEMISTRY OF THE SOLID EARTH

Kushiro, I.	Compositions of magmas formed by partial zone melting of earth's upper mantle	2 619
Akimoto, S. +	Olivine-spinel solid solution equilibria in the system Mg_2SiO_4–Fe_2SiO_4	4 1467
Wollenberg, H.A. +	Radiogeologic studies in the central part of the Sierra Nevada batholith, California	4 1481
Dickinson, W.R.	Circum-Pacific andesite types	6 2261
Bennett, J.H. +	On iodine abundances in deep-sea sediments *[I]*	6 2302
Pushkar, P.	Strontium isotope ratios in volcanic rocks of three island arc areas	8 2701
Kirsten, T.	Incorporation of rare gases in solidifying enstatite melts	8 2807
MacGregor, I.D.	Mafic and ultramafic inclusions as indicators of the depth of origin of basaltic magmas	12 3737
Funkhouser, J.G. +	Radiogenic helium and argon in ultramafic inclusions from Hawaii	14 4601
Press, F.	Earth models obtained by Monte Carlo inversion	16 5223
Masuda, A.	Nature of the experimental Mohole basalt—redetermination of lanthanides	16 5425
Melson, W.G. +	Volcanism and metamorphism in the mid-Atlantic ridge, 22 degrees N latitude	18 5925
Frey, F.A. +	Rare earth abundances in some basic rocks	18 6085

CHEMISTRY OF METEORITES AND TEKTITES

Wetherill, G.W. +	Evaluation of the Apollo asteroids as sources of stone meteorites	2 635
Megrue, G.H.	Rare gas chronology of hypersthene achondrites and pallasites	6 2027
Meason, J.L. +	Heavy rare gases from Leighton chondrite *[I]*	6 2297
Kirsten, T.	Incorporation of rare gases in solidifying enstatite melts	8 2807
King, E.A.,Jr.	Martha's Vineyard and selected Georgia tektites: New chemical data *[d]*	8 2835
Wasson, J.T.	Concentrations of Ni, Ga, Ge and Ir in Canyon Diablo and other Arizona octahedrites	10 3207
Remo, J.L. +	A physical model for tektites of meteoritic origin	12 3727
Kruger, S.T. +	Cosmic-ray-produced hydrogen 3 and helium 3 in stony meteorites *[I]*	14 4784
Lord, H.C.	Hydrogen and helium ion implantation into olivine and enstatite: Retention coefficients, saturation concentrations, and temperature-release profiles	16 5271
Rancitelli, L.A. +	Potassium: argon problem in iron meteorites	16 5429
Keil, K.	Mineralogical and chemical relationships among enstatite chondrites	22 6945

INSTRUMENTS AND TECHNIQUES

Ku, T.	Protactinium 231 method of dating corals from Barbados Island	6 2271
Williston, S.H.	Mercury in the atmosphere	22 7051

GENERAL OR MISCELLANEOUS

Feige, Y. +	Production rates of neutrons in soils due to natural radioactivity	10 3135
Deuser, W.G.	Postdepositional changes in oxygen isotope ratios of pleistocene foraminifer tests in the Red Sea	10 3311
Bischoff, J.L.	Kinetics of calcite nucleation: Magnesium ion inhibition and ionic strength catalysis	10 3315
Canalas, R.A. +	Terrestrial abundance of noble gases *[I]*	10 3331
Lloyd, R.M.	Oxygen isotope behavior in the sulfate-water system	18 6099

MINERALOGY, PETROLOGY, AND PHYSICAL PROPERTIES OF ROCKS

MINERALOGY AND PETROLOGY

Kanamori, H. +	Thermal diffusivity measurement of rock-forming minerals from 300 degrees to 1100 degrees K	2 595
Akimoto, S. +	Olivine-spinel solid solution equilibria in the system Mg_2SiO_4–Fe_2SiO_4	4 1467
Dickinson, W.R.	Circum-Pacific andesite types	6 2261
Pushkar, P.	Strontium isotope ratios in volcanic rocks of three island arc areas	8 2701
Kirsten, T.	Incorporation of rare gases in solidifying enstatite melts	8 2807
Wright, T.L. +	March 1965 eruption of Kilauea volcano	10 3181
Fujisawa, H.	Temperature and discontinuities in the transition layer within the earth's mantle: Olivine-spinel transition in the Mg_2SiO_4–Fe_2SiO_4 system	10 3281
MacGregor, I.D.	Mafic and ultramafic inclusions as indicators of the depth of origin of basaltic magmas	12 3737
Hatherton, T. +	Andesitic volcanism and seismicity in New Zealand	14 4615

Brooks, C.	Relationship between feldspar alteration and precise post-crystallization movement of rubidium and strontium isotopes in a granite	14 4751
O'Connor, J.T.	Mineral stability at the Martian surface	16 5301
Raleigh, C.B.	Mechanisms of plastic deformation of olivine	16 5391
Masuda, A.	Nature of the experimental Mohole basalt—redetermination of lanthanides	16 5425
Melson, W.G. +	Volcanism and metamorphism in the mid-Atlantic ridge, 22 degrees N latitude	18 5925
Davis, B.L. +	Linear compressibility quadric of hexagonal AgI	18 6019
Spetzler, H. +	Effect of temperature and partial melting on velocity and attenuation in a simple binary system	18 6051
Jackson, E.D. +	Chemical composition of the lunar surface at the Surveyor landing sites	24 7621

ELASTICITY, FRACTURE, AND FLOW

Kushiro, I.	Compositions of magmas formed by partial zone melting of earth's upper mantle	2 619
Walsh, J.B.	Mechanics of strike-slip faulting with friction	2 761
Brune, J.N.	Seismic moment, seismicity, and rate of slip along major fault zones	2 777
Bollinger, G.A.	Determination of earthquake fault parameters from long-period *P* waves	2 785
Giardini, A.A. +	Triaxial compression data on nuclear explosion shocked, mechanically shocked, and normal granodiorite from the Nevada test site	4 1305
Scholz, C.H.	Microfracturing and the inelastic deformation of rock in compression	4 1417
Brace, W.F. +	Electrical resistivity changes in saturated rocks during fracture and frictional sliding	4 1433
Scholz, C.H.	Experimental study of the fracturing process in brittle rock	4 1447
Walsh, J.B.	Attenuation in partially melted material	6 2209
Berg, C.A.	Relation between stress drop, fault friction, and crustal strength in shallow focus strike slip faulting	6 2217
Brace, W.F. +	Permeability of granite under high pressure	6 2225
Krokosky, E.M. +	Strength characteristics of basalt rock in ultra-high vacuum	6 2237
Klement, W.,Jr. +	High-low quartz inversion: Thermodynamics of the lambda transition	6 2249
Dickinson, W.R.	Circum-Pacific andesite types	6 2261
Luedemann, H.D. +	Melting curves of lithium, sodium, potassium, and rubidium to 80 kilobars	8 2795
Schreiber, E. +	Revised data on polycrystalline magnesium oxide *[l]*	8 2837
Scholz, C.H.	Mechanism of creep in brittle rock	10 3295
Remo, J.L. +	Physical model for tektites of meteoritic origin	12 3727
Gordon, R.B. +	Velocity and attenuation of seismic waves in imperfectly elastic rock	12 3917
Takahashi, T. +	Isothermal compression of the alloys of iron up to 300 kb at room temperature: Iron-nickel alloys	14 4717
Byerlee, J.D.	Brittle-ductile transition in rocks	14 4741
Anderson, O.L.	Volume dependence of the Grüneisen parameter	16 5187
Soga, N.	Elastic properties of CaO under pressure and temperature	16 5385
Raleigh, C.B.	Mechanisms of plastic deformation of olivine	16 5391
Carter, N.L. +	Deformation of olivine in stony meteorites	16 5439
Scott, R.F.	Density of the lunar surface soil *[l]*	16 5469
Davis, B.L. +	Linear compressibility quadric of hexagonal AgI	18 6019
Byerlee, J.D. +	Stick slip, stable sliding, and earthquakes—effect of rock type, pressure, strain rate, and stiffness	18 6031
Spetzler, H. +	Effect of temperature and partial melting on velocity and attenuation in a simple binary system	18 6051
Peselnick, L. +	Rate of 15-kb phase transition in limestone	18 6117
Anderson, D.L. +	Shock-wave equations of state for rocks and minerals	20 6477
Liebermann, R.C. +	Elastic constants of polycrystalline hematite as a function of pressure to 3 kb	20 6585
Simpson, D.R. +	Effect of water on compressive strength of diabase	20 6591
McConnell, R.K.,Jr.	Viscosity of the mantle from relaxation time spectra of isostatic adjustment	22 7089
Anderson, O.L.	Negative pressure dependence of the shear modulus found in some oxides *[d]*	24 7707

PHASE CHANGES

Kushiro, I.	Compositions of magmas formed by partial zone melting of earth's upper mantle	2 619
Birch, F.	Thermal expansion at high pressures *[l]*	2 817
Soga, N.	Temperature and pressure derivatives of isotropic sound velocities of alpha quartz *[l]*	2 827
Akimoto, S. +	Olivine-spinel solid solution equilibria in the system Mg_2SiO_4–Fe_2SiO_4	4 1467
Dennis, J.G. +	Phase changes as a cause of deep earthquakes *[d]*	4 1506
Sykes, L.R.	Phase changes as a cause of deep earthquakes *[r]*	4 1508
Klement, W.,Jr.	High-low quartz inversion: Thermodynamics of lambda transition	6 2249
Peselnick, L. +	Wave velocities and hysteresis in Solenhofen limestone for pressures up to 12 kb	10 3271
Fujisawa, H.	Temperature and discontinuities in transition layer within earth's mantle: Olivine-spinel transition in the Mg_2SiO_4–Fe_2SiO_4 system	10 3281
MacGregor, I.D.	Mafic and ultramafic inclusions as indicators of depth of origin of basaltic magmas	12 3737
Wang, C.	Ultrasonic study of phase transition in calcite to 20 kb and 180 degrees C	12 3937
Klement, W.,Jr.	High-low quartz inversion: Scaling laws; approximate relations for volume and compressibility versus temperature at high pressures	14 4711
Takahashi, T. +	Isothermal compression of the alloys of iron up to 300 kb at room temperature: Iron-nickel alloys	14 4717
Fujisawa, H. +	Thermal diffusivity of Mg_2SiO_4, Fe_2SiO_4, and NaCl at high pressures and temperatures	14 4727
Kushiro, I. +	Melting of a peridotite nodule at high pressures and high water pressures	18 6023
Spetzler, H. +	Effect of temperature and partial melting on velocity and attenuation in a simple binary system	18 6051
Peselnick, L. +	Rate of 15-kb phase transition in limestone	18 6117
Wang, C.	Constitution of the lower mantle as evidenced from shock wave data	20 6459
Anderson, D.L. +	Shock-wave equations of state for rocks and minerals	20 6477
Liebermann, R.C. +	Elastic constants of polycrystalline hematite as a function of pressure to 3 kb	20 6585
O'Connell, R.J.	Movement of the M discontinuity under isostatic conditions *[d]*	20 6604

van de Lindt, W.J.	Movement of the M discontinuity under isostatic conditions *[r]*	20 6607
Vaisnys, J.R.	Propagation of acoustic waves through system undergoing phase transformations	24 7675

EQUATIONS OF STATE

Birch, F.	Thermal expansion at high pressures *[I]*	2 817
Schreiber, E. +	Revised data on polycrystalline magnesium oxide *[I]*	8 2837
Takahashi, T. +	Isothermal compression of the alloys of iron up to 300 kb at room temperature: Iron-nickel alloys	14 4717
Anderson, O.L.	Volume dependence of the Grüneisen parameter	16 5187
Spetzler, H. +	Effect of temperature and partial melting on velocity and attenuation in a simple binary system	18 6051
Wang, C.	Constitution of the lower mantle as evidenced from shock wave data	20 6459
Anderson, D.L. +	Shock-wave equations of state for rocks and minerals	20 6477
Liebermann, R.C. +	Elastic constants of polycrystalline hematite as a function of pressure to 3 kb	20 6585
Anderson, O.L.	Negative pressure dependence of the shear modulus found in some oxides *[d]*	24 7707

MAGNETIC AND ELECTRICAL PROPERTIES

Ozima, M. +	Potassium-argon ages and magnetic properties of some dredged submarine basalts	2 711
Westcott, M.F. +	Magnetic properties of some beach sand ilmenite particles	4 1269
Brace, W.F. +	Electrical resistivity changes in saturated rocks during fracture and frictional sliding	4 1433
McDonald, K.L. +	Recent trends in the earth's magnetic field	6 2057
Strangway, D.W. +	Possible cause of high magnetic stability in volcanic rocks	12 3787
Boyce, R.E.	Electrical resistivity of modern marine sediments from the Bering Sea	14 4759
Brace, W.F. +	Further studies of effects of pressure on electrical resistivity of rocks	16 5407
Porath, H.	Magnetic studies on specimens of intergrown maghemite and hematite	18 5959

THERMAL PROPERTIES

Manghnani, M.H. +	Ultrasonic interferometry technique for studying elastic properties of rocks *[I]*	2 824
Fujisawa, H. +	Thermal diffusivity of Mg_2SiO_4–Fe_2SiO_4 and NaCl at high pressures and temperatures	14 4727
Wright, J.A. +	In situ measurement of thermal conductivity in the presence of transverse anistropy *[I]*	16 5477

INSTRUMENTS AND TECHNIQUES

Peselnick, L. +	Wave velocities and hysteresis in Solenhofen limestone for pressures up to 12 kb	10 3271
Klement, W., Jr.	High-low quartz inversion: Scaling laws; approximate relations for volume and compressibility versus temperature at high pressures	14 4711
Fujisawa, H. +	Thermal diffusivity of Mg_2SiO_4, Fe_2SiO_4, and NaCl at high pressures and temperatures	14 4727
Holloway, J.R. +	Generation of H_2O–CO_2 mixtures for use in hydrothermal experimentation *[I]*	20 6598

GENERAL OR MISCELLANEOUS

Scholz, C.H.	Experimental study of the fracturing process in brittle rock	4 1447
Currie, R.G.	Geomagnetic spectrum of internal origin and lower mantle conductivity	8 2779
Muller, R.H. +	Shift in temperature of maximum density of water in capillaries *[I]*	10 3345
Dorman, L.M.	Anelasticity and the spectra of body waves	12 3877
Soga, N.	Elastic properties of CaO under pressure and temperature	16 5385
Brace, W.F. +	Further studies of the effects of pressure on electrical resistivity of rocks	16 5407
Ryan, J.A. +	Adhesion of silicates cleaved in ultrahigh vacuum	18 6061
Lilley, F.E.M. +	Elastic wave motion and a nonuniform magnetic field in electrical conductors	20 6527

VULCANOLOGY

Manghnani, M.H. +	Ultrasonic interferometry technique for studying elastic properties of rocks *[I]*	2 824
Dalrymple, G.B. +	Paleomagnetism and potassium-argon ages of some volcanic rocks from the Rio Grande Gorge *[d]*	4 1502
Ozima, M. +	Paleomagnetism and potassium-argon ages of some volcanic rocks from the Rio Grande Gorge *[r]*	4 1504
Dickinson, W.R.	Circum-Pacific andesite types	6 2261
Pushkar, P.	Strontium isotope ratios in volcanic rocks of three island arc areas	8 2701
Cummings, D.	Mechanical analysis of effect of Timber Mountain caldera on Basin and Range faults	8 2787
Matsushima, S.	Vertical distribution of dust to 30 km *[d]*	9 3085
Rosen, J.M.	Vertical distribution of dust to 30 km *[r]*	9 3088
Wright, T.L. +	March 1965 eruption of Kilauea volcano	10 3181
Ryall, A. +	Crustal structure of southern Hawaii related to volcanic processes in upper mantle	14 4561
Funkhouser, J.G. +	Radiogenic helium and argon in ultramafic inclusions from Hawaii	14 4601
Rinehart, J.S.	Seismic signatures of some Icelandic geysers	14 4609
Hatherton, T. +	Andesitic volcanism and seismicity in New Zealand	14 4615
Cadle, R.D. +	Particles in fume from the 1967 Kilauea eruption *[I]*	14 4780
McClaine, L.A. +	Volcanic smoke clouds	16 5235
Clacy, G.R.T.	Geothermal ground noise amplitude and frequency spectra in New Zealand volcanic region	16 5377
Masuda, A.	Nature of experimental Mohole basalt—redetermination of lanthanides	16 5425
Melson, W.G. +	Volcanism and metamorphism in the mid-Atlantic ridge, 22 degrees N latitude	18 5925

Frey, F.A. +	Rare earth abundances in some basic rocks	18 6085
Rinehart, J.S.	Geyser activity in Eureka County, Nevada	24 7703

TECTONOPHYSICS

STRUCTURE OF THE CRUST

Schimke, G.R. +	Geophysical description of a Pacific Ocean seamount	2 559
Aki, K.	Seismological evidences for soft thin layers in upper mantle under Japan	2 585
Boldizsár, T.	Geothermal data from the Vienna Basin	2 613
Bassinger, B.G.	Marine magnetic study in the northeast Chukchi Sea	2 683
Verma, R.K. +	Paleomagnetism of Kamthi sandstones of Upper Permian age from Godavary Valley, India	2 703
van Andel, T.H. +	Mid-Atlantic ridge between 22 degrees and 23 degrees N and the tectonics of mid-ocean rises	4 1279
Smith, T.E.	Aeromagnetic measurements in Dixie Valley, Nevada	4 1321
James, D.E. +	Crustal structure of the Middle Atlantic States	6 1983
Harrison, C.G.A.	Formation of magnetic anomaly patterns by dyke injection	6 2137
Berg, C.A.	Relation between stress drop, fault friction, and crustal strength in shallow focus strike slip faulting	6 2217
Schwiderski, E.W.	Mantle convoction and crustal tectonics inferred from a satellite's orbit: A different view of sea-floor spreading *[l]*	8 2828
Ludwig, W.J. +	Seismic-refraction measurements on the southeast African continental margin	12 3707
Stover, C.W.	Seismicity of the south Atlantic Ocean	12 3807
Ryall, A. +	Crustal structure of southern Hawaii related to volcanic processes in the upper mantle	14 4561
Hayes, D.E. +	Magnetic anomalies and their relation to the Aleutian Island arc	14 4637
Bowin, C.O.	Geophysical study of the Cayman trough	16 5159
Hatherton, T. +	Gravity profiles across the Alpine fault, New Zealand	16 5343
Melson, W.G. +	Volcanism and metamorphism in mid-Atlantic ridge, 22 degrees N latitude	18 5925
Meister, L.J. +	Surface strain changes and strain energy release in the Dixie Valley—Fairview Peak area, Nevada	18 5981
Keller, G.H. +	East-west profile from Kermadec trench to Valparaiso, Chile *[l]*	22 7154
Einarsson, T.	Submarine ridges as an effect of stress fields	24 7561
Francheteau, J. +	Geophysical description of a Pacific Ocean seamount *[d]*	24 7713
Schimke, G.R. +	Geophysical description of a Pacific Ocean seamount *[r]*	24 7716

HEAT FLOW

Kanamori, H. +	Thermal diffusivity measurement of rock-forming minerals from 300 degrees to 100 degrees K	2 595
Boldizsár, T.	Geothermal data from the Vienna Basin	2 613
Cermák, V.	Terrestrial heat flow in the Alpine-Carpathian foredeep in South Moravia *[l]*	2 820
Lachenbruch, A.H.	Proposed lunar heat flow measurement from a polar orbiting satellite *[d]*	2 822
Wollenberg, H.A. +	Radiogeologic studies in the central part of the Sierra Nevada batholith, California	4 1481
Oxburgh, E.R. +	Mid-ocean ridges and geotherm distribution during mantle convection	8 2643
Tozer, D.C.	Pattern of geothermal heat flow *[l]*	8 2834
McKenzie, D.P. +	Heat flow inside the island arcs of the northwestern Pacific	10 3173
Roy, R.F. +	Heat flow in the United States	16 5207
Lachenbruch, A.H. +	Heat flow and water temperature fluctuations in the Denmark Strait	18 5829
Simmons, G. +	Heat flow data 2	20 6608
Lachenbruch, A.H.	Preliminary geothermal model of the Sierra Nevada	22 6977
Horai, K. +	Seismic travel-time anomaly due to anomalous heat flow and density	24 7577

CONVECTION CURRENTS

van Andel, T.H. +	Mid-Atlantic ridge between 22 degrees and 23 degrees N and tectonics of mid-ocean rises	4 1279
Oxburgh, E.R. +	Md-ocean ridges and geotherm distribution during mantle convection	8 2643
Schwiderski, E.W.	Mantle convection and crustal tectonics inferred from a satellite's orbit: A different view of sea-floor spreading *[l]*	8 2828
Tozer, D.C.	Pattern of geothermal heat flow *[l]*	8 2834
Raff, A.D.	Sea-floor spreading—another rift	12 3699
Press, F.	Earth models obtained by Monte Carlo inversion	16 5223
Isacks, B. +	Seismology and the new global tectonics	18 5855

SEAFLOOR SPREADING

Ozima, M. +	Potassium-argon ages and magnetic properties of some dredged submarine basalts	2 711
Brune, J.N.	Seismic moment, seismicity, and rate of slip along major fault zones	2 777
van Andel, T.H. +	Mid-Atlantic ridge between 22 degrees and 23 degrees N and the tectonics of mid-ocean rises	4 1279
Morgan, W.J.	Rises, trenches, great faults, and crustal blocks	6 1959
Harrison, C.G.A.	Formation of magnetic anomaly patterns by dyke injection	6 2137
Schwiderski, E.W.	Mantle convection and crustal tectonics inferred from a satellite's orbit: A different view of sea-floor spreading *[l]*	8 2828
LePichon, X.	Sea-floor spreading and continental drift	12 3661
Raff, A.D.	Sea-floor spreading—another rift	12 3699
Newton, R.R.	Experimental evidence for a secular decrease in the gravitational constant *G*	12 3765

Tobin, D.G. +	Seismicity and tectonics of the northeast Pacific Ocean	12 3821
Stauder, W.	Mechanism of the Rat Island earthquake sequence of February 4, 1965, with relation to island arcs and sea-floor spreading	12 3847
Dymond, J.R. +	Age of cobb seamount *[l]*	12 3977
Wyss, M. +	Seismic moment, stress, and source dimensions for earthquakes in the California-Nevada region ¢	14 4681
Isacks, B. +	Seismology and the new global tectonics	18 5855
Meyerhoff, A.A.	Arthur Holmes: Originator of spreading ocean floor hypothesis	20 6563
Dietz, R.S.	Arthur Holmes: Originator of spreading ocean floor hypothesis *[d]*	20 6567
Hess, H.H.	Arthur Holmes: Originator of spreading ocean floor hypothesis *[d]*	20 6569
Einarsson, T.	Submarine ridges as an effect of stress fields	24 7561
Stauder, W.	Tensional character of earthquake foci beneath the Aleutian trench with relation to sea-floor spreading	24 7693

CONTINENTAL DRIFT

McElhinny, M.W. +	Paleomagnetism of some Carboniferous glacial varves from central Africa	2 689
Briden, J.C.	Paleomagnetism of the Ntonya ring structure, Malawi	2 725
Morgan, W.J.	Rises, trenches, great faults, and crustal blocks	6 1959
Heirtzler, J.R. +	Marine magnetic anomalies, geomagnetic field reversals, and motions of the ocean floor and continents	6 2119
LePichon, X.	Sea-floor spreading and continental drift	12 3661
Raff, A.D.	Sea-floor spreading—another rift	12 3699
Zijderveld, J.D.A.	Natural remanent magnetizations of some intrusive rocks from the Sør Rondane Mountains, Queen Maud Land, Antarctica	12 3773
Wyss, M. +	Seismic moment, stress, and source dimensions for earthquakes in the California-Nevada region ¢	14 4681
Bender, P.L. +	Satellite geodesy using laser range measurements only	16 5353
Isacks, B. +	Seismology and the new global tectonics	18 5855
Jones, D.L.	Paleomagnetism of the Premier Mine kimberlite	22 6937
Tryggvason, E.	Measurement of surface deformation in Iceland by precision leveling	22 7039
McConnell, R.K.,Jr.	Viscosity of the mantle from relaxation time spectra of isostatic adjustment	22 7089

INSTRUMENTS AND TECHNIQUES

Wright, J.A. +	In situ measurement of thermal conductivity in the presence of transverse anisotropy *[l]*	16 5477

GENERAL OR MISCELLANEOUS

Kanamori, H. +	Thermal diffusivity measurement of rock-forming minerals from 300 degrees to 100 degrees K	2 595
Wollenberg, H.A. +	Radiogeologic studies in the central part of the Sierra Nevada batholith, California	4 1481
Cummings, D.	Mechanical analysis of the effect of the Timber Mountain caldera on Basin and Range faults	8 2787
Scholz, C.H.	Mechanism of creep in brittle rock	10 3295
Condie, K.C.	Possible role of water in the earth's thermal history *[l]*	16 5466
Vali, V. +	Some observations of strains across the Kern River fault using laser interferometer *[l]*	18 6143
O'Connell, R.J.	Movement of M discontinuity under isostatic conditions *[d]*	20 6604
van de Lindt, W.J.	Movement of M discontinuity under isostatic conditions *[r]*	20 6607

SEISMOLOGY

BODY WAVES

Robinson, E.S.	Seismic wave propagation on a heterogeneous polar ice sheet	2 739
Schreiber, B.C.	Sound velocity in deep sea sediments	4 1259
Nowroozi, A.A.	Measurement of *Q* values from the free oscillations of the earth	4 1407
Horn, D.R. +	Correlation between acoustical and other physical properties of dee-sea cores	6 1939
Teng, T.	Attenuation of body waves and the *Q* structure of the mantle	6 2195
O'Brien, P.N.S.	Lake Superior crustal structure—a reinterpretation of the 1963 seismic experiment	8 2669
Dorman, L.M.	Anelasticity and the spectra of body waves	12 3877
Hales, A.L. +	*P*-wave station anomalies and the structure of the upper mantle	12 3885
Buchbinder, G.G.R.	Properties of the core-mantle boundary and observations of *PcP*	18 5901
Springer, D. +	Sterling experiment: Decoupling of seismic waves by shot-generated cavity	18 5995
Kushiro, I. +	Melting of a peridotite nodule at high pressures and high water pressures	18 6023
Randall, M.J.	Relative sizes of multipolar components in deep earthquakes *[l]*	18 6140
De Bremaecker, J.-Cl.	Anelasticity and the spectra of body waves *[d]*	22 7147

SURFACE WAVES

Robinson, E.S.	Seismic wave propagation on a heterogeneous polar ice sheet	2 739
Knopoff, L. +	Apparent initial phase of a source of Rayleigh waves	2 755
Nowroozi, A.A.	Measurement of *Q* values from the free oscillations of the earth	4 1407
Takeuchi, H. +	Rayleigh- and Love-wave discrepancy and existence of magma pockets in upper mantle *[l]*	10 3349
Wyss, M. +	Seismic moment, stress, and source dimensions for earthquakes in the California-Nevada region ¢	14 4681
Herron, E.M. +	Seismic study of the sediments in the Hudson River	14 4701

FREE OSCILLATIONS (periods less than 12 hours)

Takeuchi, H. +	Partial derivatives of free oscillation period with respect to physical parameter changes within the earth	12 3801

SEISMIC SOURCES (mechanisms, magnitude, frequency spectrum, space and time distribution)

Knopoff, L. +	Apparent initial phase of a source of Rayleigh waves	2 755
Brune, J.N.	Seismic moment, seismicity, and rate of slip along major fault zones	2 777
Bollinger, G.A.	Determination of earthquake fault parameters from long-period *P* waves	2 785
King, C. +	Model seismicity: Rupture parameters, stress, and energy relations	4 1399
Scholz, C.H.	Microfracturing and the inelastic deformation of rock in compression	4 1417
Scholz, C.H.	Experimental study of the fracturing process in brittle rock *e*	4 1447
Dennis, J.G. +	Phase changes as a cause of deep earthquakes *[d]*	4 1506
Sykes, L.R.	Phase changes as a cause of deep earthquakes *[r]*	4 1508
Mikumo, T.	Atmospheric pressure waves and tectonic deformation associated with the Alaskan earthquake of March 28, 2964	6 2009
Stover, C.W.	Seismicity of the south Atlantic Ocean	12 3807
Tobin, D.G. +	Seismicity and tectonics of the northeast Pacific Ocean	12 3821
Stauder, W.	Mechanism of the Rat Island earthquake sequence of February 4, 1965, with relation to island arcs and sea-floor spreading	12 3847
Hamilton, R.M. +	Seismicity and structure of North Island, New Zealand	12 3859
Page, R.	Focal depths of aftershocks	12 3897
Northrop, J. +	Effect of near-source bottom conditions on long-range sound propagation in ocean	12 3905
Rinehart, J.S.	Seismic signatures of some Icelandic geysers	14 4609
Wyss, M. +	Seismic moment, stress, and source dimensions for earthquakes in the California-Nevada region *e*	14 4681
Boucher, G. +	Localized microearthquakes in the Denali fault zone *[l]*	14 4789
Aki, K.	Seismic displacements near a fault	16 5359
Clacy, G.R.T.	Geothermal ground noise amplitude and frequency spectra in the New Zealand volcanic region	16 5377
Weinstein, M.S.	Spectra of acoustic and seismic signals generated by underwater explosions *[l]*	16 5473
Isacks, B. +	Seismology and the new global tectonics	18 5855
Meister, L.J. +	Surface strain changes and strain energy release in Dixie Valley-Fairview Peak area, Nevada	18 5981
Springer, D. +	The Sterling experiment: Decoupling of seismic waves by shot-generated cavity	18 5995
Tamrazyan, G.P.	Earthquakes of Nevada (USA) and the tidal forces	18 6013
Byerlee, J.D. +	Stick slip, stable sliding, and earthquakes — effect of rock type, pressure, strain rate, and stiffness	18 6031
Randall, M.J.	Relative sizes of multipolar components in deep earthquakes *[l]*	18 6140
Stauder, W.	Tensional character of earthquake foci beneath Aleutian trench with relation to sea-floor spreading	24 7693

STRONG MOTIONS AND SHOCK WAVES

Remo, J.L. +	A physical model for tektites of meteoritic origin	12 3727
Vortman, L.J.	Craters from surface explosions and scaling laws	14 4621
Aki, K.	Seismic displacements near a fault	16 5359

STRUCTURE OF THE CRUST AND UPPER MANTLE

Aki, K.	Seismological evidences for soft thin layers in upper mantle under Japan	2 585
Dennis, J.G. +	Phase changes as a cause of deep earthquakes *[d]*	4 1506
Sykes, L.R.	Phase changes as a cause of deep earthquakes *[r]*	4 1508
James, D.E. +	Crustal structure of Middle Atlantic States	6 1983
Shor, G.G., Jr. +	Seismic refraction studies off Oregon and northern California	6 2175
Teng, T.	Attenuation of body waves and the *Q* structure of the mantle	6 2195
Walsh, J.B.	Attenuation in partially melted material	6 2209
Le Pichon, X. +	Deep-sea sediment velocity determination made while reflection profiling	8 2597
Houtz, R. +	Velocity of deep-sea sediments from sonobuoy data	8 2615
Oxburgh, E.R. +	Mid-ocean ridges and geotherm distribution during mantle convection	8 2643
O'Brien, P.N.S.	Lake Superior crustal structure — a reinterpretation of the 1963 seismic experiment	8 2669
Murauchi, S. +	Crustal structure of Philippine Sea	10 3143
Peselnick, L. +	Wave velocities and hysteresis in Solenhofen limestone for pressures up to 12 kb	10 3271
Fujisawa, H.	Temperature and discontinuities in the transition layer within the earth's mantle: Olivine-spinel transition in the Mg_2SiO_4-Fe_2SiO_4 system	10 3281
Takeuchi, H. +	Rayleigh- and Love-wave discrepancy and the existence of magma pockets in upper mantle *[l]*	10 3349
Ludwig, W.J. +	Seismic-refraction measurements on the southeast African continental margin	12 3707
Stauder, W.	Mechanism of the Rat Island earthquake sequence of February 4, 1965, with relation to island arcs and sea-floor spreading	12 3847
Hamilton, R.M. +	Seismicity and structure of North Island, New Zealand	12 3859
Dorman, L.M.	Anelasticity and spectra of body waves	12 3877
Hales, A.L. +	*P*-wave station anomalies and structure of upper mantle	12 3885
Gordon, R.B. +	Velocity and attenuation of seismic waves in imperfectly elastic rock	12 3917
Ryall, A. +	Crustal structure of southern Hawaii related to volcanic processes in the upper mantle	14 4561
Harbison, R.N.	Geology of De Soto canyon	16 5175
Soga, N.	Elastic properties of CaO under pressure and temperature	16 5385
Isacks, B. +	Seismology and new global tectonics	18 5855
Kushiro, I. +	Melting of a peridotite nodule at high pressures and high water pressures	18 6023

O'Connell, R.J.	Movement of the M discontinuity under isostatic conditions *[d]*	20 6604
van de Lindt, W.J.	Movement of the M discontinuity under isostatic conditions *[r]*	20 6607
Normark, W.R. +	Seismic reflection study of shallow structure of Hawaiian arch	22 6991
Rikitake, T.	Resonant behavior of electric currents electromagnetically induced within a nonuniform sheet of conductor	22 7019
Horai, K. +	Seismic travel-time anomaly due to anomalous heat flow and density	24 7577

STRUCTURE OF THE EARTH'S INTERIOR BELOW THE UPPER MANTLE

Nowroozi, A.A.	Measurement of Q values from free oscillations of earth	4 1407
Akimoto, S. +	Olivine-spinel solid solution equilibria in the system Mg_2SiO_4-Fe_2SiO_4	4 1467
Teng, T.	Attenuation of body waves and Q structure of the mantle	6 2195
Takeuchi, H. +	Partial derivatives of free oscillation period with respect to physical parameter changes within earth	12 3801
Gordon, R.B. +	Velocity and attenuation of seismic waves in imperfectly elastic rock	12 3917
Buchbinder, G.G.R.	Properties of the core-mantle boundary and observations of *PcP*	18 5901
Spetzler, H. +	Effect of temperature and partial melting on velocity and attenuation in a simple binary system	18 6051
Wang, C.	Constitution of lower mantle as evidenced from shock wave data	20 6459
Anderson, D.L. +	Shock-wave equations of state for rocks and minerals	20 6477

PHENOMENA RELATED TO EARTHQUAKE PREDICTION

Brune, J.N.	Seismic movement, seismicity, and rate of slip along major fault zones	2 777
King, C. +	Model seismicity: Rupture parameters, stress, and energy relations	4 1399
Brace, W.F. +	Electrical resistivity changes in saturated rocks during fracture and frictional sliding	4 1433
Scholz, C.H.	Experimental study of the fracturing process in brittle rock ¢	4 1447
Page, R.	Focal depths of aftershocks	12 3897
Wyss, M. +	Seismic moment, stress, and source dimensions for earthquakes in California-Nevada region ¢	14 4681
Boucher, G. +	Localized microearthquakes in Denali fault zone *[l]*	14 4789
Isacks, B. +	Seismology and the new global tectonics	18 5855
Byerlee, J.D. +	Stick slip, stable sliding, and earthquakes — effect of rock type, pressure, strain rate, and stiffness	18 6031
Smylie, D.E. +	Earthquakes and observed motion of rotation pole	24 7661

INSTRUMENTS AND TECHNIQUES

Le Pichon, X. +	Deep-sea sediment velocity determination made while reflection profiling	8 2597
Houtz, R. +	Velocity of deep-sea sediments from sonobuoy data	8 2615
O'Brien, P.N.S.	Lake Superior crustal structure — a reinterpretation of the 1963 seismic experiment	8 2669
Latham, G.V. +	Waves, weather, and ocean bottom microseisms	12 3945
Herron, J.M. +	Seismic study of sediments in Hudson River	14 4701
Gangi, A.F. +	Wide-band transducer for seismic modeling	14 4735
Boucher, G. +	Localized microearthquakes in Denali fault zone *[l]*	14 4789
Springer, D. +	Sterling experiment: Decoupling of seismic waves by shot-generated cavity	18 5995
Vali, V. +	Some observations of strains across Kern River fault using laser interferometer *[l]*	18 6143

GENERAL OR MISCELLANEOUS

Mikumo, T.	Atmospheric pressure waves and tectonic deformation associated with Alaskan earthquake of March 28, 1964	6 2009
Wright, T.L. +	March 1965 eruption of Kilauea volcano	10 3181
Northrop, J.	Submarine topographic echoes from Chase V	12 3909
Latham, G.V. +	Waves, weather, and ocean bottom microseisms	12 3945
Hatherton, T. +	Andesitic volcanism and seismicity in New Zealand	14 4615
Herron, J.M. +	Seismic study of sediments in Hudson River	14 4701
Press, F.	Earth models obtained by Monte Carlo inversion	16 5223
Tamrazyan, G.P.	Earthquakes of Nevada (USA) and tidal forces	18 6013
Lilley, F.E.M. +	Elastic wave motion and a nonuniform magnetic field in electrical conductors	20 6527
Vaisnys, J.R.	Propagation of acoustic waves through a system undergoing phase transformations	24 7675
Rinehart, J.S.	Geyser activity in Eureka County, Nevada	24 7703

INFORMATION RELATED TO GEOLOGIC TIME

CENOZOIC

Ozima, M. +	Potassium-argon ages and magnetic properties of some dredged submarine basalts	2 711
Chamalaun, F.H.	Paleomagnetism of Réunion Island and its bearing on secular variation	14 4647
Pitman, W.C., III +	Sea-floor spreading in Gulf of Alaska	20 6571

MESOZOIC

Brock, A.	Paleomagnetism of the Nuanetsi igneous province and its bearing upon sequence of Karoo igneous activity in southern Africa	4 1389
Wollenberg, H.A. +	Radiogeologic studies in central part of Sierra Nevada batholith, California	4 1481
Ku, T.	Protactinium 231 method of dating corals from Barbados Island	6 2271
Carmichael, C.M. +	Paleomagnetism of Late Triassic, North Mountain basalt of Nova Scotia	8 2811

PALEOZOIC

McElhinny, M.W. +	Paleomagnetism of some Carboniferous glacial varves from central Africa	2 689
Verma, R.K. +	Paleomagnetism of Kamthi sandstones of Upper Permian age from Godavary Valley, India	2 703
Briden, J.C.	Paleomagnetism of Ntonya ring structure, Malawi	2 725
Knowles, R.R. +	Paleomagnetism results from Mauch Chunk formation	20 6515

PRECAMBRIAN

Briden, J.C.	Paleomagnetism of Ntonya ring structure, Malawi	2 725
Peterman, Z.E. +	Age of precambrian events in northeastern Front Range, Colorado	6 2277
Vincenz, S.A.	Partial self-reversal in Keweenawan rocks 1. Magnetization of Portage Lake lavas	8 2729
Vincenz, S.A. +	Phenomenon of partial self-reversal in Keweenawan rocks 2. Magnetization of Upper Keweenawan lavas and sediments and of Lower Keweenawan dikes	8 2753
Evans, M.E.	Magnetization of dikes: Paleomagnetism of Widgiemooltha dike suite, Western Australia	10 3261

INFORMATION RELATED TO GEOGRAPHIC REGIONS

NORTH AMERICA

Rosen, J.	Simultaneous dust and ozone soundings over North and Central America	2 479
Roy, J.L. +	Stability of magnetization of Hurley Creek formation	2 697
Smith, T.E.	Aeromagnetic measurements in Dixie Valley, Nevada	4 1321
Wollenberg, H.A. +	Radiogeologic studies in central part of Sierra Nevada batholith, California	4 1481
James, D.E. +	Crustal structure of Middle Atlantic States	6 1983
Shor, G.G., Jr. +	Seismic refraction studies off Oregon and northern California	6 2175
Peterman, Z.E. +	Age of precambrian events in northeastern Front Range, Colorado	6 2277
Vincenz, S.A.	Partial self-reversal in Keweenawan rocks 1. Magnetization of Portage Lake lavas	8 2729
Vincenz, S.A. +	Phenomenon of partial self-reversal in Keweenawan rocks 2. Magnetization of Upper Keweenawan lavas and sediments and of Lower Keweenawan dikes	8 2753
Cummings, D.	Mechanical analysis of effect of Timber Mountain caldera on Basin and Range faults	8 2787
Carmichael, C.M. +	Paleomagnetizm of Late Triassic, North Mountain basalt of Nova Scotia	8 2811
Kelley, J.J., Jr. +	Vertical gradient of net oxidant near ground surface at Barrow, Alaska *[I]*	10 3328
Tobin, D.G. +	Seismicity and tectonics of northeast Pacific Ocean	12 3821
Harbison, R.N.	Geology of De Soto canyon	16 5175
Roy, R.F. +	Heat flow in United States	16 5207
Brakl, J. +	Interpretation of a magnetic anomaly on continental rise off Cape Hatteras	16 5313
Meister, L.J. +	Surface strain changes and strain energy release in Dixie Valley-Fairview Peak area, Nevada	18 5981
Tamrazyan, G.P.	Earthquakes of Nevada (USA) and tidal forces	18 6013
Browning, D.G. +	Velocity and temperature profiles in Lake Superior *[I]*	18 6122
Knowles, R.R. +	Paleomagnetic results from Mauch Chunk formation	20 6515
Badekas, J. +	Interpolation of vertical deflection from horizontal gravity gradients	22 6869
Lachenbruch, A.H.	Preliminary geothermal model of Sierra Nevada	22 6977
Krogh, T.E. +	Strontium isotope variation and whole-rock isochron studies, Grenville Province of Ontario	22 7107

EUROPE

Boldizsár, T.	Geothermal data from Vienna Basin	2 613
Čermák, V.	Terrestrial heat flow in Alpine-Carpathian foredeep in South Moravia *[I]*	2 820

ASIA

Aki, K.	Seismological evidences for soft thin layers in upper mantle under Japan	2 585
Verma, R.K. +	Paleomagnetism of Kamthi sandstones of Upper Permian age from Godavary Valley, India	2 703

AFRICA

McElhinny, M.W. +	Paleomagnetism of some Carboniferous glacial varves from central Africa	2 689
Brock, A.	Paleomagnetism of Nuanetsi igneous province and its bearing upon sequence of Karoo igneous activity in southern Africa	4 1389
Jones, D.L.	Paleomagnetism of Premier Mine kimberlite	22 6937

AUSTRALIA

Evans, M.E.	Magnetization of dikes: Paleomagnetism of Widgiemooltha dike suite, Western Australia	10 3261
Brooks, C.	Relationship between feldspar alteration and precise post-crystalliation movement of rubidium and strontium isotopes in a granite	14 4751

POLAR REGIONS

Hoare, R.A.	Thermohaline convection in Lake Vanda, Antarctica	2 607
Bassinger, B.G.	Marine magnetic study in northeast Chukchi Sea	2 683
Baird, G.A.	Occurrence of sporadic *E* in polar cap	11 3505
Zillman, J.W. +	Sea-to-air heat fluxes in southwest Indian Ocean in summer	22 7057

ATLANTIC OCEAN

Duncan, C.P.	An eddy in subtropical convergence southwest of South Africa	2 531
van Andel, T.H. +	Mid-Atlantic ridge between 22 degrees and 23 degrees N and tectonics of mid-ocean rises	4 1279
Dickson, G.O. +	Magnetic anomalies in South Atlantic and ocean floor spreading	6 2087
Ku, T.	Protactinium 231 method of dating corals from Barbados Island	6 2271
Houtz, R. +	Velocity of deep-sea sediments from sonobuoy data	8 2615
Stover, C.W.	Seismicity of south Atlantic Ocean	12 3807
Avery, O.E. +	An aeromagnetic survey of Norwegian Sea	14 4583
Mazeika, P.A.	Eastward flow within South Equatorial Current in eastern South Atlantic	18 5819
Melson, W.G. +	Volcanism and metamorphism in mid-Atlantic ridge, 22 degrees N latitude	18 5925
Frey, F.A. +	Rare earth abundances in some basic rocks	18 6085
Shimazaki, T. +	Nighttime variations of *F*-region electron concentration profiles	23 7399
Godby, E.A. +	Aeromagnetic profiles across Reykjanes ridge SW of Iceland	24 7637

PACIFIC OCEAN

Nozumi, Y. +	Prefrontal rain bands located in warm sector of subtropical cyclones over ocean	2 487
Roden, G.I.	Spectral analysis and interpretation of salinity-temperature-depth records	2 535
Mooers, C.N.K. +	Continental shelf waves off Oregon	2 549
Schimke, G.R. +	Geophysical description of a Pacific Ocean seamount	2 559
Pitman, W.C., III	Magnetic anomalies in Pacific and sea floor spreading	6 2069
Dickinson, W.R.	Circum-Pacific andesite types	6 2261
Murauchi, S. +	Crustal structure of Philippine Sea	10 3143
Tobin, D.G. +	Seismicity and tectonics of northeast Pacific Ocean	12 3821
Johnson, R.H. +	Geographic variation of Sofar speed and axis depth in Pacific Ocean	14 4695
Kester, D.R. +	Oxygen saturation in surface waters of northeast Pacific Ocean	16 5421
Frey, F.A. +	Rare earth abundances in some basic rocks	18 6085
Pitman, W.C., III +	Sea-floor spreading in Gulf of Alaska	20 6571
Hamon, B.V.	Spectrum of sea level at Lord Howe Island in relation to circulation	22 6925
Normark, W.R. +	Seismic reflection study of shallow structure of Hawaiian arch	22 6991
Keller, G.H. +	East-west profile from Kermadec trench to Valparaiso, Chile *[l]*	22 7154
Francheteau, J. +	Geophysical description of a Pacific Ocean seamount *[d]*	24 7713
Schimke, G.R. +	Geophysical description of a Pacific Ocean seamount *[r]*	24 7716

INDIAN OCEAN

Le Pichon, X. +	Magnetic anomalies in Indian Ocean and sea-floor spreading	6 2101
Chamalaun, F.H.	Paleomagnetism of Réunion Island and its bearing on secular variation	14 4647
Zillman, J.W. +	Sea-to-air heat fluxes in southwest Indian Ocean in summer	22 7057

LARGE ISLANDS OR BODIES OF WATER (e.g., Greenland, Mediterranean Sea)

Weertman, J.	Comparison between measured and theoretical temperature profiles of Camp Century, Greenland, borehole	8 2691
Leventhal, J.S. +	Tritium geophysics from 1961-1962 nuclear tests	8 2715
Deuser, W.G.	Postdepositional changes in oxygen isotope ratios of pleistocene foraminifer tests in Red Sea	10 3311
Costin, J.M.	Direct current measurements in Antilles current *[l]*	10 3341
Hermance, J.F. +	Deep electrical structure under Iceland	12 3797
Hatherton, T. +	Andesitic volcanism and seismicity in New Zealand	14 4615
Boyce, R.E.	Electrical resistivity of modern marine sediments from Bering Sea	14 4759
Baer, L. +	Experiments in oceanic forecasting for advective region by numerical modeling, 2. Gulf of Mexico	16 5091
Bowin, C.O.	Geophysical study of Cayman trough	16 5159

GENERAL OR MISCELLANEOUS

Horai, K. +	Seismic travel-time anomaly due to anomalous heat flow and density	24 7577

GENERAL OR MISCELLANEOUS

NOTICES AND ANNOUNCEMENTS

Shapley, A.H. +	IUWDS international geophysical calendar for 1968 *[l]*	1 460
Dessler, A.J.	Editors comment on brevity	12 3610, 13 1433, and 14 4460
Meyerhoff, A.A.	Arthur Holmes: Originator of spreading ocean floor hypothesis	20 6563
Dietz, R.S.	Arthur Holmes: Originator of spreading ocean floor hypothesis *[d]*	20 6567
Hess, H.H.	Arthur Holmes: Originator of spreading ocean floor hypothesis *[d]*	20 6569

NEW FIELDS (not classifiable under other headings)

Little, E.M.	Day length versus date graph at Arctic Circle is almost a sawtooth curve	2 735
Rudnick, P.	Day length versus date graph at Arctic Circle *[d]*	16 5472
Smylie, D.E. +	Earthquakes and observed motion of rotation pole	24 7661

INSTRUMENTS USEFUL IN THREE OR MORE FIELDS

Graham, J.W.	Elimination of static charges from spinner magnetometers *[l]*	14 4788

TECHNIQUES APPLICABLE IN THREE OR MORE FIELDS

Adamo, L.C. +	Icosahedral-gnomonic projection and grid of world ocean for wave studies	16 5125

CORRECTIONS

CORRECTIONS PUBLISHED IN VOLUME 73 (or in early issues of Vol. 74) TO PAPERS PUBLISHED IN AN EARLIER ISSUE OF VOLUME 73 (original papers designated by d)

Dessler, A.J.	Magnetic merging in magnetospheric tail	5 1861
Knudsen, W.C.	Geographic distribution of *F*-region electrons with about 10-ev energy	11 3608
Scholz, C.H.	Experimental study of fracturing process in brittle rock	14 4794
Wait, J.R.	Mode conversion and refraction effects in earth-ionosphere waveguide for VLF radio waves	17 5809
Manchester, R.N.	Correlation of Pc 1 micropulsations as spaced stations	17 5809
Vasyliunas, V.M.	Survey of low-energy electrons in evening sector of magnetosphere with OGO 1 and OGO 3	17 5810
Kaufmann, P. +	Relative changes on lower ionosphere conductivity gradients during SID events	19 6404
Dickinson, R.E. +	Dynamics of natural gas in thermosphere for small Rossby numbers	21 6867
Wyss, M. +	Seismic moment, stress, and source dimensions for earthquakes in California-Nevada region	22 7160
Ludwig, W.J. +	Seismic-refraction measurements on SE African continental margin	24 7718

CORRECTIONS PUBLISHED IN VOLUME 73 TO PAPERS PUBLISHED IN PREVIOUS VOLUMES

Currie, R.G.	The geomagnetic spectrum — 40 days to 5.5 years, and Magnetic shielding properties of the earth's mantle	1 459
McGarr, A. +	Transmission and reflection of Rayleigh waves at vertical boundaries	4 1511
Pearce, D.C. +	Dielectric constant of Greenland ice cap	6 2306
Baker, D.J. +	Rocket measurement of midlatitude night airglow emissions	7 2546
Kahle, A.B. +	Estimated surface motions of earth's core	9 3090
Kahle, A.B. +	Comparison of estimates of surface fluid motions of earth's core for various epochs	9 3090
Dessler, A.J. +	Hydromagnetic theory of geomagnetic storms	9 3091
Lindsley, D.H. +	Iron-titanium oxides and oxygen fugacities in volcanic rocks	10 3351
Binsack, J.H.	Plasmapause observations with M.I.T. experiment on IMP 2	11 3608
Eviatar, A.	Scattering of particles by waves in presence of magnetic field	15 5018
van de Lindt, W.J.	Movement of M discontinuity under isostatic conditions *[r]*	20 6607
Lee, W.H.K. +	Time variation of ocean temperatures and its relation to internal waves and oceanic heat flow measurements	22 7160

AUTHOR INDEX

Journal of Geophysical Research, Volume 73
January – December, 1968

Aarons, J., Midlatitude electron content *[i]* 23 7530
Abbott, C.E., Charge transfer between drops in electric field 20 6415
Abraham-Shrauner, B., Conservation equations for weakly turbulent plasmas 19 6299
Adamo, L.C., Oceanic numerical modeling, 2 16 5091
Adamo, L.C., Projection and grid for wave studies 16 5125
Adelfang, S.I., Oceanic numerical modeling, 2 16 5091
Aditya, P.K., Primary helium flux *[i]* 13 4393
Aikin, A.C., *E*-region electron concentration 5 1617
Akasofu, S.-I., Ring current effects 11 3377
Aki, K., Soft layers in upper mantle 2 585
Aki, K., Seismic displacements near a fault 16 5359
Akimoto, S., Olivine-spinel solid solution equilibria 4 1467
Akimoto, S., Thermal diffusivity of $MgSiO_4$, $FeSiO_4$, and NaCl 14 4727
Akimoto, S., Melting of peridotite 18 6023
Albee, P.R., Ionospheric disturbance 3 1039
Albert, R.D., Alpha particles in auroral fluxes *[r]* 13 4453
Alexander, E.C., Jr., Terrestrial abundance of nobel gases *[i]* 10 3331
Alfonso-Faus, A., Solar wind and planetary rotation *[d]* 13 4449
Alfvén, H., Magnetospheric neutral surfaces *[i]* 13 4379
Alksne, A.Y., Shock temperature jumps *[i]* 5 1851
Alldredge, L.R., Property of geomagnetic field 2 677
Allen, R.V., Volcanic clouds 16 5235
Alley, C.O., Satellite geodesy using laser range measurements 16 5353
Alsmiller, R.G., Jr., Neutron transport 15 4935
Anderson, D.L., Radio occultation study of planetary atmospheres 5 1819
Anderson, D.L., Velocity and attenuation in a binary system 18 6051
Anderson, D.L., Shock-wave equations of state 20 6477
Anderson, H.R., Radial gradient of cosmic radiation 9 2897
Anderson, H.R., Time variations in interplanetary radiation intensity 9 2911
Anderson, H.R., Cosmic count and thunderstorms *[d]* 10 3340
Anderson, H.R., POGO ion chamber 19 6285
Anderson, K.A., Studies of magnetospheric substorm, 1 5 1685
Anderson, K.A., Hydromagnetic disturbances in bow shock spikes 7 2371
Anderson, K.A., Terrestrial electrons in solar wind 7 2387
Anderson, O.L., Revised data on polycrystalline magnesium oxide *[i]* 8 2837
Anderson, O.L., Volume dependence of Grüneisen parameter 16 5187
Anderson, O.L., Pressure dependence of shear modulus *[d]* 24 7707
Anderson, R.E., Ionospheric phase fluctuations *[i]* 13 4434
Anderssen, R.S., Conductivity models for earth 20 6535
Andrews, G.F., Multilevel IEC for weather-radar use 4 1201
Andrews, M.K., Polar exosphere 23 7407
Angerami, J.J., Magnetospheric properties from ducted and nonducted whistlers 1 1
Annexstad, J.O., *Pg* micropulsations at conjugate points 5 1805
Annexstad, J.O., Pc 1 fine structure *[i]* 9 3063
Arakawa, H., Prefrontal rain bands in warm sector 2 487
Arens, J.F., Trapped electrons 17 5673
Armstrong, T.P., Magnetospheric and magnetotail protons 1 143
Armstrong, T.P., Particle radiation near Venus *[i]* 1 421
Arnold, J.R., Cosmic dust 5 1837
Aronowitz, L., Contamination of lunar surface samples 10 3231
Asano, S., Crustal structure of Philippine Sea 10 3143
Asanuma, T., Crustal structure of Philippine Sea 10 3143
Asbridge, J.R., Interplanetary shock waves 1 43
Asbridge, J.R., Solar wind and magnetosheath (ATS) 17 5761
Asbridge, J.R., Outward flow of protons *[i]* 17 5777
Atkinson, G., Two-dimensional Chapman-Ferraro problem 23 7319
Atkinson, W.R., Collision efficiencies of hydrometeors 6 2035
Avery, O.E., Aeromagnetic survey of Norwegian Sea 14 4583
Axford, W.I., Temperate-zone sporadic *E* 1 111
Axford, W.I., Solar cosmic rays *[i]* 13 4396
Axford, W.I., Polar wind and helium *[i]* 21 6855

Badekas, J., Vertical deflection of gravity 22 6869
Baer, L., Oceanic numerical modeling, 2 16 5091
Baer, L., Projection and grid for wave studies 16 5125
Baird, G.A., Polar cap sporadic *E* 11 3505
Baker, D.M., Waves from nuclear explosions *[i]* 1 448
Baldwin, R.B., Rille pattern in lunar crater Humboldt 10 3227
Baldwin, R.B., Baldwin's relation for lunar craters *[d]* 18 6133
Bame, S.J., Interplanetary shock waves 1 43
Bame, S.J., Earth's bow shock 1 51
Bame, S.J., Solar wind electrons *[i]* 15 4999
Bame, S.J., Interplanetary ionization state 17 5485
Bame, S.J., Solar wind and magnetosheath (ATS) 17 5761
Bame, S.J., Outward flow of protons *[i]* 17 5777
Bame, S.J., Magnetotail electron bursts 19 6189
Banks, P.M., $He2^+$ in topside ionosphere *[i]* 15 5008
Banks, P.M., Polar wind *[i]* 21 6846
Barakat, R., Nonlinear periodic capillary-gravity waves 20 6545
Barcus, J.R., Auroral precipitation and electrojet *[d]* 19 6392
Barfield, J.N., Magnetospheric substorms 21 6687
Barnett, T.P., Generation, dissipation, and prediction of wind waves 2 513
Barnett, T.P., Overshoot effect in waves 22 6879
Barrett, D.L., Modulation of a proton magnetometer signal 16 5327
Barrett, J.W., Microwave emission in stratosphere 4 1119
Barrington, R.E., Alouette VLF at the plasmapause 9 2929
Barth, C.A., Lyman alpha near Venus *[i]* 7 2541
Bassett, W.A., Isothermal compression of Fe-Ni alloys to 300 kb 14 4717
Bassinger, B.G., Magnetic study in Chukchi Sea 2 683
Basu, S., Electron content variation 17 5599
Batson, R.M., Surveyor 3—television observations 12 3989
Batterson, S.A., Surveyor 3—principal scientific results 12 3983
Batterson, S.A., Surveyor 3—lunar surface mechanical properties 12 4081
Batterson, S.A., Principal science results from Surveyor 5 22 7165
Batterson, S.A., Lunar surface mechanical properties 22 7169
Bauer, P., Protonosphere 19 6259
Bauer, S.J., Whistler cutoff and ring current *[i]* 5 1853
Beard, K.V., Collision efficiency of cloud drops 20 6407
Beardsley, G.F., Jr., Polarization of submarine daylight 20 6449
Beckmann, P., Depolarization of lunar radar backscatter 2 649
Begemann, F., Isotopic composition of atmospheric hydrogen 4 1139
Begemann, F., Tritium and deuterium in atmospheric methane 4 1149
Behannon, K.W., Earth's bow shock and magnetic tail 3 907
Behannon, K.W., Lunar magnetic wake 11 3421
Behannon, K.W., Lunar wake magnetic field 21 6723
Behannon, K.W., Lunar magnetic properties 23 7257
Beiersdorf, R., Electromagnetic cascades 15 5012
Bell, J.A., Sea to air heat fluxes 22 7057
Bell, T.F., Artificial VLF hiss *[i]* 13 4409
Belton, M.J.S., CO_2 on Mars 15 4795
Bender, P.L., Satellite geodesy using laser range measurements 16 5353
Bennett, D.L., Crustal structure and volcanism of upper mantle 14 4561
Bennett, J.H., Iodine in ocean sediments *[i]* 6 2302

Benson, H.E., Surveyor 3--lunar surface mechanical properties 12 4081
Benson, H.E., Lunar surface mechanical properties 22 7169
Berg, C.A., Stress drop, fault friction, and crustal strength 6 2217
Berg, T.G. O., Kinetics of condensation 10 3103
Berkey, F.T., Auroral absorption and luminosity 1 319
Bernstein, W., Alpha particles in auroral fluxes *[d]* 13 4452
Betinis, E.J., EM wave scatter from lunar surface 2 657
Bettinger, R.T., Cylindrical Langmuir probes 7 2513
Bhalla, M.S., Paleomagnetism of Kamthi sandstones from India 2 703
Bhandari, N., Cosmic dust 5 1837
Billard, F., Nuclei of condensation: formation and evolution 14 4487
Binsack, J.H., Bow shock compression *[l]* 1 429
Binsack, J.H., Hydromagnetic disturbances in the bow shock spikes 7 2371
Birch, F., Thermal expansion at high pressures *[l]* 2 817
Birch, F., Heat flow in the United States 16 5207
Birmingham, T.J., Charged particle energization 1 83
Birmingham, T.J., Moving magnetic field lines 17 5505
Bischoff, J.L., Kinetics of calcite nucleation 10 3315
Blackwell, D.D., Heat flow in the United States 16 5207
Blair, D.N., Compressibility of hexagonal AgI 18 6019
Blair, W.E., OGO 2 proton gyrofrequency emission *[l]* 11 3592
Blake, J.B., Low-energy cosmic-ray cutoffs 1 87
Blake, J.B., Energetic electrons at synchronous altitude 15 4915
Blake, J.B., Solar cosmic rays 15 4927
Blake, J.B., Boundary of electrons (ATS) 17 5743
Blanchard, M.B., Micrometeoroid penetrations on Gemini 9 3035
Blanchard, M.B., Analyses of possible Leonid shower matter 19 6347
Blitzer, L., Synchronous rotation of moon *[d]* 6 2304
Block, L.P., Field-aligned currents 15 4807
Blum, R., Magnetosphere boundary model 7 2411
Blumle, L.J., *E*-region electron concentration 5 1617
Boldizsár, T., Geothermal data from the Vienna basin 2 613
Bollinger, G.A., Determination of earthquake fault parameters 2 785
Boucher, G., Microearthquakes *[l]* 14 4789
Boughner, R.T., Neutron transport 15 4935
Bowden, M., Convective flow in fluid annulus 22 6887
Bowen, A.J., Wave 'set-down' and set-up 8 2569
Bowen, E.D., Transequatorial ionosphere VHF characteristics 7 2469
Bowin, C.O., Mid-Atlantic ridge at 22 degrees N 4 1279
Bowin, C.O., Cayman trough 16 5159
Bower, M.E., Aeromagnetic profiles across Reykjanes ridge 24 7637
Bowyer, C.S., Night helium glow *[l]* 3 1107
Boyce, R.E., Electrical resistivity of marine sediments 14 4759
Brace, L.H., Electron temperature and concentration at 1000 km 5 1607
Brace, L.H., Nocturnal ionization at Fort Churchill 23 7285
Brace, W.F., Electrical resistivity changes in stressed rocks 4 1433
Brace, W.F., Permeability of granite under high pressure 6 2225
Brace, W.F., Effects of pressure on electrical resistivity 16 5407
Brace, W.F., Stick slip and earthquakes 18 6031
Bradbury, J.N., Electron content in aurora 7 2363
Braddock, W.A., Age of precambrian events, Colorado 6 2277
Brakl, J., A magnetic anomaly on continental rise 16 5313
Branscomb, L.M., Mesospheric electron concentrations 1 27
Breiland, J.G., Vertical distribution of atmospheric ozone 16 5021
De Bremaecker, J., Anelasticity and spectra of body waves *[d]* 22 7147
Bricard, J., Nuclei of condensation: formation and evolution 14 4487
Briden, J.C., Paleomagnetism of Ntonya ring structure 2 725
Brinton, H.C., Plasmasphere contraction 3 961
Brinton, H.C., Thermal exospheric ions 17 5521
Broadfoot, A.L., Airglow spectrum *[l]* 1 426
Broadfoot, A.L., CO_2 on Mars 15 4795
Brock, A., Paleomagnetism of the Nuanetsi igneous province 4 1389
Brook, M., Fluctuating radar echoes *[l]* 22 7137
Brooks, C., Feldspar alteration and isotope migration 14 4751
Brooks, C., Two-error regression treatment 18 6071
Brown, R.R., Auroral microbursts *[l]* 9 3042
Brown, R.R., Magnetotail electron bursts 19 6189
Brown, R.R., Auroral precipitation and electrojet *[d]* 19 6392
Brown, W.E.,Jr., Surveyor 3—principal scientific results 12 3983
Brown, W.E.,Jr., Principal science results from Surveyor 5 22 7165
Brown, W.L., Trapped particle acceleration 1 153
Brown, W.L., Energetic electrons (ATS) 17 5751
Browning, D.G., Velocity and temperature profiles in Lake Superior *[l]* 18 6122
Brune, J.N., Seismic moment, seismicity, and rate of slip 2 777
Buchbinder, G.G.R., Core-mantle boundary and PcP 18 5901
Buettner, K.J.K., Precipitation over ocean *[d]* 22 7145
Bufe, C.G., Description of a Pacific Ocean seamount 2 559
Bufe, C.G., Pacific Ocean seamount *[r]* 24 7716
Buhl, D., Reradiation and thermal emission from lunar craters 16 5281
Buhl, D., Anomalous cooling of craters 24 7593
Bull, G.V., Ionospheric winds 9 3005
Bunn, C.C., Lightning flash counter calibration 6 1907
Burch, J.L., Auroral electrons *[l]* 11 3585
Burford, R.O., Strain and strain energy 18 5981
Burlaga, L.F., Magnetosheath-solar wind boundary 19 6167
Burlaga, L.F., Plasma observations 21 6809
Burnett, G.B., Airglow observations from OSO-B2 satellite 3 857
Burnham, C.W., Generation of H_2O-CO_2 mixtures *[l]* 20 6598
Burns, J.A., Solar wind and planetary rotation *[d]* 13 4449
Burns, J.A., Charged particles in a spiral field 23 7377
Burns, T.E., ELF low-frequency cutoff 23 7437
Burton, G.D., Aeromagnetic survey of the Norwegian Sea 14 4583
Bushman, W.W., High-altitude winds 15 4969
Bussian, A.E., Lunar effects on cosmic rays *[l]* 13 4404
Byerlee, J.D., Brittle-ductile transition in rocks 14 4741
Byerlee, J.D., Stick slip and earthquakes 18 6031
Byrne, R.J., Aerodynamic criteria in aeolian sand transport 2 541

Cadle, R.D., Particles in fume from Kilauea eruption *[l]* 14 4780
Cahill, L.J., Trapped particle acceleration 1 153
Cahill, L.J.,Jr., Magnetopause current layer 5 1757
Cahill, L.J.,Jr., Ring current distributions 21 6711
Cairns, J.L., Thermocline strength variations 8 2591
Calvert, W., Ionospheric electron concentration measurements 11 3511
Camacho, L., Low-energy cosmic rays 5 1593
Canalas, R.A., Terrestrial abundance of noble gases *[l]* 10 3331
Carignan, G.R., High-altitude winds 15 4969
Carmichael, C.M., Paleomagnetism of North Mountain Basalt 8 2811
Carovillano, R.L., Energy of geomagnetic disturbances 11 3395
Carpenter, D.L., Upper intensity whistler cutoff 9 2919
Carpenter, D.L., Alouette VLF at the plasmapause 9 2929
Carpenter, G.B., VLF perturbations due to nuclear explosion 1 393
Carter, C.J., Oxygen absorption in lower atmosphere 10 3113
Carter, N.L., Deformation of olivine in stony meteorites 16 5439
Čermak, J.E., Tower shadow effect 6 1869
Čermák, V., Heat flow in South Moravia *[l]* 2 820
Chamalaun, F.H., Paleomagnetism of Reunion Island 14 4647
Chapman, M.C., Inner radiation zone 21 6825
Chase, L.M., Auroral-zone particle spectra 11 3469
Chen, A.A., Cylindrical Langmuir probes 7 2513
Chen, A.J., Plasma flow 17 5511
Cheyney, H., Composition of the Venus clouds *[d]* 18 6136
Chimonas, G., Temperate-zone sporadic *E* 1 111
Choate, R., Surveyor 3—lunar surface mechanical properties 12 4081
Choate, R., Lunar surface mechanical properties 22 7169
Christensen, E.M., Surveyor 3—principal scientific results 12 3983
Christensen, E.M., Surveyor 3—lunar surface mechanical properties 12 4081
Christensen, E.M., Principal science results from Surveyor 5 22 7165
Christensen, E.M., Lunar surface mechanical properties 22 7169

Clacy, G.R.T., Geothermal noise amplitude and frequency spectra 16 5377
Clapp, R.E., Nuclear radio signal *[d]* 19 6395
Clark, K.C., Stable auroral red arc 13 4213
Clay, C.S., A magnetic anomaly on continental rise 16 5313
Cleary, J.R., *P*-wave anomalies and upper mantle structure 12 3885
Clemesha, B.R., Stratospheric aerosol 24 7553
Cline, T.L., Solar flare X rays *[I]* 1 434
Cloutier, P.A., *Sq* current measurement 5 1771
Cohen, L.H., Quartz inversion: Thermodynamics of lambda transition 6 2249
Cohen, R., Photoelectron heating 3 831
Colburn, D.S., Geomagnetic tail 3 943
Colburn, D.S., Distinction between hot and cold moon *[I]* 20 6601
Coleman, P.J., Jr., Interplanetary magnetic field 1 61
Coleman, P.J., Jr., Charged particles in spiral field 1 165
Coleman, P.J., Jr., Cosmic-ray diffusion 17 5495
Coleman, P.J., Jr., Magnetopause at synchronous altitude 17 5699
Coleman, P.J., Jr., Magnetospheric substorms 21 6687
Colgate, S.A., Electrical heating of tornado vortex *[I]* 18 6121
Colin, L., Charged-particle temperatures and concentrations 9 2967
Collins, R.J., Lunar theory and processes 12 4115
Comstock, C., Particles in field gradients 1 175
Condie, K.C., Water in earth's thermal history *[I]* 16 5466
Conel, J.E., Surveyor 3—Lunar thermal characteristics 12 4095
Cooper, J.W., Thermocline near Bermuda 18 5849
Coroniti, F.V., Studies of magnetospheric substorm, 1 5 1685
Coroniti, F.V., Studies of magnetospheric substorm, 2 5 1697
Coroniti, F.V., Studies of magnetospheric substorm, 3 5 1715
Coroniti, S.C., VLF perturbations due to nuclear explosion 1 393
Coroniti, S.C., Electron-ion densities between 40 and 80 km *[I]* 13 4421
Costin, J.M., Direct measurements in Antilles current *[I]* 10 3341
Cox, A., Geomagnetic polarity intervals 10 3247
Cox, A., Virtual geomagnetic poles *[r]* 18 6139
Crook, G.M., Electromagnetic and electrostatic waves 5 1723
Crook, G.M., VLF electric field 21 6665
Crystal, T.L., OGO 2 proton gyrofrequency emission *[I]* 11 3592
Csanady, G.T., Wind-driven circulation in Great Lakes 8 2579
Csanady, G.T., Lake's response to sudden wind 20 6435
Cucin, R.L., H irradiation of oxides *[I]* 12 3972
Cummings, D., Effect of Timber Mountain caldera on Basin and Range faults 8 2787
Cummings, W.D., Magnetopause at synchronous altitude (ATS) 17 5699
Cummings, W.D., Magnetospheric substorms 21 6687
Currie, D.G., Satellite geodesy using laser range measurements 16 5353
Currie, R.G., Geomagnetic tail 3 943
Currie, R.G., Geomagnetic spectrum and mantle conductivity 8 2779

Dalrymple, G.B., Paleomagnetism and K-Ar ages 4 1502
D'Angelo, N., Ion-acoustic instabilities 19 6313
Danielsson, L.R., Plasma phenomena in comets 1 259
da Rosa, A.V., Electron concentration from Doppler dispersion *[I]* 3 1102
Das, A.C., VLF mechanism 23 7457
Das Gupta, A., Electron content variation 17 5599
Dave, J.V., Stratospheric dust and color of twilight sky 22 6897
Davidson, M.J., Spatial coherence of geomagnetic rapid variations 6 2143
Davies, C.M., Confinement of magnetic field by ions *[d]* 11 3605
Davies, K., Waves from nuclear explosions *[I]* 1 448
Davis, B.L., Compressibility of hexagonal AgI 18 6019
Davis, L., Jr., Interplanetary magnetic field 1 61
Davis, L.A., Velocity and attenuation of seismic waves 12 3917
Davis, L.R., Trapped particle acceleration 1 153
Dawson, G.A., Acoustic output of a long spark *[I]* 2 815
Dawson, G.A., Power and energy dissipation in lightning *[I]* 10 3335
Dawson, G.A., Pressure pulse from lightning stroke *[d]* 20 6595
Deardorff, J.W., Air-sea transfer coefficients 8 2549
DeCarli, P.S., Deformation of olivine in stony meteorites 16 5439
Decker, E.R., Heat flow in United States 16 5207
DeFelice, J., Rare gases in Deelfontein meteorite 18 6111
Dehlinger, P., Seismic refraction studies 6 2175
Delach, M.N., Acoustical and physical properties of deep-sea cores 6 1939
de Mendonca, F., Electron concentration from Doppler dispersion *[I]* 3 1102
Den, N., Crustal structure of Philippine Sea 10 3143
Dennis, J.G., Phase changes as a cause of deep earthquakes *[d]* 4 1506
Denny, M., Decoupling of seismic waves by cavity 18 5995
Dessler, A.J., Magnetotail magnetic merging ¢ 1 209
Dessler, A.J., Brevity 13 1433 and 14 4460
Deuser, W.G., Postdepositional changes in oxygen isotope ratios 10 3311
DeWitt, R.N., Auroral electrojet polarization 19 6307
de Wys, J.N., Surveyor 6 magnet experiment 22 6915
de Wys, J.N., Electromagnetic properties of lunar surface 22 7193
Dickinson, R.E., Thermosphere gas dynamics ¢ 13 4299
Dickinson, W.R., Circum-Pacific andesite types 6 2261
Dickinson, W.R., Andesitic volcanism and seismicity in New Zealand 14 4615
Dickson, G.O., Magnetic anomalies in South Atlantic 6 2087
Dickson, G.O., Magnetic anomalies and geomagnetic reversals 6 2119
Dietz, R.S., Hypothesis of spreading ocean floor 20 6567
Doell, R.R., Paleomagnetism and K-Ar ages *[d]* 4 1502
Doell, R.R., Virtual geomagnetic poles *[r]* 18 6139
Doherty, L.R., X-15 dayglow UV *[I]* 11 3597
Doherty, R.H., Lower ionosphere concentrations 7 2429
Dolginov, Sh. Sh., Lunar magnetic field *[d]* 19 6389
Donahue, T.M., Neutral hydrogen and charged particle interaction *[d]* 13 4455
Dorman, J., Seismic study of sediments 14 4701
Dorman, L.M., Anelasticity and spectra of body waves 12 3877
Dowden, R.L., Dotted pearl micropulsations 9 2995
Doyle, H.A., *P*-wave anomalies and upper mantle structure 12 3885
Drake, C.L., Seismic study of sediments 14 4701
Dryer, M., Absence of lunar shock *[I]* 11 3583
Dryer, M., Flare-generated shock waves 15 4875
Dufour, S.W., Charged-particle temperatures and concentrations 9 2967
Duncan, C.P., Eddy in subtropical convergence 2 531
Durgaprasad, N., Cosmic-ray nuclei ¢ 5 1583
Dwornik, S.E., Surveyor 3 — introduction 12 3981
Dwornik, S.E., Principal science results from Surveyor 5 22 7165
Dymond, J.R., Age of cobb seamount *[I]* 12 3977
Dyson, P.L., Topside spread *F* at midlatitudes 7 2441

Eagleson, P.S., Water wave theory 14 4555
Eaker, N., Inonospheric electron concentration measurements 11 3511
Eather, R.H., Auroral intensity ratios 1 119
Eather, R.H., Nighttime Lyman-alpha emission *[d]* 11 3599
Eather, R.H., Auroral alpha particles 13 4185
Eckhardt, D.H., Electromagnetic impedance of earth 16 5317
Eden, H.F., Convective flow in fluid annulus 22 6887
Edgar, N.T., Crustal structure of Phillipine Sea 10 3143
Edwards, P.J., Microburst phenomena, 1 7 2333
Egeland, A., Earth-ionosphere cavity resonances *[I]* 15 4986
Einarsson, T., Submarine ridges and stress fields 24 7561
Ellis, D.V., Planetary X rays 3 867
Emmanuel, C.B., Temperature distribution of atmosphere of Mars 10 3213
Engel, R., Strains across Kern River fault *[I]* 18 6143
England, A.W., Electrical conductivity of moon 10 3219
Engler, N., Wind detail from falling spheres *[I]* 10 3323
Erickson, J.E., Velocity distribution of meteors 12 3721
Evans, D.S., Near monoenergetic auroral electrons 7 2315
Evans, D.S., Field-aligned electron bursts 19 6201
Evans, J.E., Electron content in aurora 7 2363
Evans, J.V., *F* layer at sunrise 11 3489
Evans, M.E., Magnetization of dikes in western Australia 10 3261
Evans, W.F.J., Infrared dayglow measurements 9 2885
Eviatar, A., Magnetopause transfer processes 17 5561
Ewing, J., Deep-sea sediment velocity determination 8 2597

Ewing, J., Velocity of deep-sea sediments from sonobuoy data 8 2615
Ewing, J.I., Crustral structure of Philippine Sea 10 3143
Ewing, M., Correlation between ocean current and ocean tide 6 1921

Fabian, P., Sr^{90} residence time and interhemispheric mixing 12 3611
Fairfield, D.H., Hydromagnetic disturbances in bow shock spikes 7 2371
Fairfield, D.H., Geomagnetic tail at 1000 R_E 19 6179
Fairfield, D.H., Magnetosphere field configuration 23 7329
Fairhall, A.W., Radiocarbon from nuclear weapons tests 4 1185
Fairhall, A.W., Transport of tracers in lower stratosphere 14 4461
Faller, J.E., Satellite geodesy using laser range measurements 16 5353
Falthammar, C.-G., Field-aligned currents 15 4807
Fan, C.Y., Solar proton propagation 5 1555
Fannin, B.M., Ionospheric analysis 13 4325
Farley, T.A., Inner radiation zone 21 6825
Farlow, N.H., Micrometeoroid penetrations on Gemini 9 3035
Farlow, N.H., Electron microscopy of rocket collections 13 4363
Farlow, N.H., Analyses of possible Leonid shower matter 19 6347
Fastie, W.G., Ultraviolet in aurora 11 3353
Fay, W.J., Transequatorial ionosphere VHF characteristics 7 2469
Fechtig, H., Cosmic-dust collection 16 5029
Fehsenfeld, F.C., Metal ion chemistry of earth's atmosphere 19 6215
Feige, Y., Neutrons from alpha particles in soils 10 3135
Feix, G., Solar radio bursts 19 6249
Fejer, J.A., Ionospheric electron concentration measurements 11 3611
Fergus, J.H., Jr., Effect of water on strength of diabase 20 6591
Ferguson, E.E., Metal ion chemistry in atmosphere 19 6215
Ferraro, A.J., High-power wave interaction *[l]* 13 4427
Ferraro, A.J., Capability of high power wave interaction 23 7543
Ferraro, V.C.A., Confinement of magnetic field by ions *[d]* 11 3605
Ferry, G.V., Micrometeoroid penetrations on Gemini 9 3035
Ferry, G.V., Analyses of possible Leonid shower matter 19 6347
Few, A.A., Cosmic count and thunderstorms *[d]* 10 3340
Ficklin, B.P., OGO 2 proton gyrofrequency emission *[l]* 11 3592
Fireman, E.L., Rare gases in Deelfontein meteorite 18 6111
Fisher, D.E., K:Ar in iron meteorites 16 5429
Fisher, D.E., Frequency distribution of meteorite-earth collisions 20 6503
Fishman, G.J., Planetary X rays 3 867
Fisk, L.A., Solar cosmic rays *[l]* 13 4396
Fliegel, M., Correlation between ocean current and ocean tide 6 1921
Flood, W.A., *D*-region measurements 17 5585
Fontheim, E.G., Protonosphere 19 6259
Föppl, H., Auroral electric field 1 21
Forman, M.A., Radial cosmic-ray anistropy *[l]* 17 5783
Formisano, V., Geomagnetic sudden impulses 15 4869
Foster, T.D., Haline convection induced by freezing 6 1933
Francheteau, J., Pacific Ocean seamount 24 7713
Frangos, W.T., Permeability of granite under high pressure 6 2225
Frank, E.R., Particles in fume from Kilauea eruption *[l]* 14 4780
Frank, F.C., Property of geomagnetic field 2 677
Frank, L.A., Electron flux contours 1 199
Frank, L.A., Particle radiation near Venus *[l]* 1 421
Frank, L.A., Inner zone low-energy fluxes *[l]* 1 442
Frank, L.A., Proton lifetime 17 5665
Franzini, J.B., Cylindrical unsaturated flow of soil-water *[r]* 12 3971
Franzini, J.B., Horizontal flow in soils 16 5151
Freden, S.C., Low-energy cosmic-ray cutoffs 1 87
Freden, S.C., Energetic electrons at synchronous altitude 15 4915
Freden, S.C., Solar cosmic rays 15 4927
Freden, S.C., Boundary of electrons (ATS) 17 5743
Freeman, J.W., Jr., Ion flow in magnetosphere 13 4151
Freeman, J.W., Jr., Plasma flow 17 5511
Freeman, J.W., Jr., Plasma flow at magnetosphere (ATS) 17 5719
Fredricks, R.W., Electromagnetic and electrostatic waves 5 1723
Fredricks, R.W., Ion cyclotron whistlers in solar wind 5 1747
Fredricks, R.W., Ambiguous data from fluxgate magnetometer *[r]* 9 3081
Fredricks, R.W., Magnetosonic wave propagation 23 7429
Freier, P.S., Primary cosmic radiation 13 4261
Fremouw, E.J., VHF refraction in aurora *[l]* 9 3053
Fremouw, E.J., Radio-star visibility fades 11 3557
Fremouw, E.J., Radio-star visibility fades 11 3565
French, W.S., Seismic refraction studies 6 2175
Frey, F.A., Rare earth abundances 18 6085
Friedman, I., Isotopic composition of atmospheric hydrogen 4 1139
Friedman, I., Tritium and deuterium in atmospheric methane 4 1149
Friling, L.A., Cosmic-ray neutron flux measurements 21 6649
Fritz, R.B., Eclipse ionospheric electron content *[l]* 15 4994
Fritz, T.A., High-latitude outer-zone boundary region 23 7245
Fuchs, M., Evaporation from unsaturated surfaces 4 1299
Fujii, N., Thermal diffusivity of minerals 300-1100°K 2 595
Fujii, N., Thermal diffusivity of $MgSiO_4$, $FeSiO_4$, and NaCl 14 4727
Fujisawa, H., Olivine-spinel solid solution equilibria 4 1467
Fujisawa, H., Temperature and discontinuities in transition layer 10 3281
Fujisawa, H., Thermal diffusivity of $MgSiO_4$, $FeSiO_4$, and NaCl 14 4727
Fujita, A., Fallout particles in the ground-level air 12 3637
Funkhouser, J.G., He and Ar in ultramafic inclusions 14 4601

Gage, B.P., Schumann resonances *[l]* 13 4416
Gale, A.W., Seismicity and structure of North Island, N.Z. 12 3859
Galejs, J., ELF and VLF wave propagation 1 339
Galejs, J., ELF and VLF waves *[l]* 13 4439
Gall, R., Low-energy cosmic rays 5 1593
Gall, R., Asymptotic cosmic-ray directions *[l]* 13 4400
Gallagher, J.J., Direct current measurements in the Antilles *[d]* 22 7148
Galvin, C.J., Jr., Breaker type classification 12 3651
Gangi, A.F., Wide-band transducer for seismic modeling 14 4735
Garipay, R.R., Surveyor 3—lunar thermal characteristics 12 4095
Garipay, R.R., Lunar surface temperatures 22 7209
Garland, G.D., Deep electrical structure under Iceland 12 3797
Garland, G.D., Thermal conductivity in presence of transverse anisotropy *[l]* 16 5477
Garrett, W.D., Monomolecular surface films and sea water 16 5145
Garriott, O.K., Electron concentration from Doppler dispersion *[l]* 3 1102
Gary, S.P., Electrostatic wave acceleration *[l]* 23 7524
Gassmann, G.J., VLF perturbations due to nuclear explosion 1 393
Gault, D.E., Surveyor 3—principal scientific results 12 3983
Gault, D.E., Lunar theory and processes 12 4115
Gault, D.E., Principal science results from Surveyor 5 22 7165
George, D.C., Kinetics of condensation 10 3103
Gerloff, U., Cosmic-dust collection 16 5029
Ghosh, S.N., N and NO between 100 and 280 km 1 309
Ghosh, S.N., Atomic nitrogen *[l]* 13 4425
Giardini, A.A., Triaxial compression data on granodiorite 4 1305
Gilbert, H.E., Interplanetary ionization state 17 5485
Gilinsky, V., Nuclear explosion radio pulse 1 405
Gille, J.C., Diurnal temperature variation at the stratopause 6 1863
Godby, E.A., Aeromagnetic profiles across Reykjanes ridge 24 7637
Goetz, A.F.H., Differential infrared lunar emission spectroscopy 4 1455
Gold, T., Lunar theory and processes 12 4115
Goldstein, M., Magnetic stability in volcanic rocks 12 3787
Golomb, D., Air densities from jet radii 9 3017
Good, R.E., Air densities from jet radii 9 3017
Gopalan, K., Age of hypersthene (L) chondrites 22 7133
Gordon, R.B., Velocity and attenuation of seismic waves 12 3917
Gosling, J.T., Interplanetary shock waves 1 43
Gow, A.J., Electrolytic conductivity of snow and ice 12 3643
Goyer, G.G., Shock wave from lightning discharge 10 3121
Grader, R.J., X-ray airglow in daytime sky *[l]* 22 7149

Graham, J.W., Elimination of static charges from spinner magnetometers *[l]* 14 4788
Grant, W.B., Refractive index microstructure 20 6425
Green, A.E.S., Energy loss functions 1 233
Green, G.N., H irradiation of oxides *[l]* 12 3972
Green, I.M., Earth's bow shock 1 51
Green, I.M., VLF electric field 21 6665
Green, J., Lunar theory and processes 12 4115
Green, R., P-wave anomalies and upper mantle structure 12 3885
Greenstadt, E.W., Earth's bow shock 1 51
Greenstadt, E.W., Ambiguous data from fluxgate magnetometer *[r]* 9 3081
Gregory, J.B., High-power waves *[d]* 23 7540
Greifinger, C., Hydromagnetic propagation 23 7473
Grefinger, P.S., Hydromagnetic propagation 23 7473
Griffiths, W.K., Barometric coefficients 23 7503
Griggs, M., Emissivities of natural surfaces 24 7545
Grossi, M.D., Mariner 4 radio occultation *[l]* 9 3039
Grossman, J.J., Adhesion of silicates cleaved in ultrahigh vacuum 18 6061
Groves, G.W., Sea level observations *[l]* 12 3965
Gudiksen, P.H., Transport of tracers in the lower stratosphere 14 4461
Gulledge, I.S., Night airglow O I intensity profiles 17 5535
Gunst, R.H., Recent trends in earth's magnetic field 6 2057
Gupta, J.C., Lunar effects on cosmic rays *[l]* 13 4404
Gupta, J.C., Semidiurnal lunar harmonic L_2 *[l]* 15 5004
Gurnett, D.A., VLF hiss *[l]* 3 1096
Gurnett, D.A., Microburst phenomena, 3 7 2355
Gurnett, D.A., VLF morphology 17 5613
Gurnett, D.A., VLF electric and magnetic fields 17 5649
Gurnett, D.A., ELF low-frequency cutoff 23 7437
Guthart, H., OGO 2 proton gyrofrequency emission *[l]* 11 3592

Haerendel, G., Auroral electric field 1 21
Hagemeyer, W.A., Lunar surface temperatures 22 7209
Hagemayer, W.A.,Jr., Surveyor 3-lunar thermal characteristics 12 4095
Hagiwara, K., Crustal structure of Philippine Sea 10 3143
Haines, A., Tritium content of atmospheric methane and ethane 4 1167
Hales, A.L., P-wave anomalies and upper mantle structure 12 3885
Halpern, G., Charged particles in a spiral field 23 7377
Hamano, Y., Surface waves and existence of magma pockets *[l]* 10 3349
Hamilton, R.M., Seismicity and structure of North Island, N.Z. 12 3859
Hamm, D.P., Oceanic numerical modeling, 1 16 5081
Hamon, B.V., Spectrum of sea level 22 6925
Hansen, J.E., Composition of Venus clouds *[d]* 18 6136
Hansen, W.M., Adhesion of silicates cleaved in ultrahigh vacuum 18 6061
Hanser, F.A., Electron and proton intensities in magnetic disturbance *[l]* 15 4979
Hanson, W.B., Photoelectron heating 3 831
Harbison, R.N., Geology of De Soto canyon 16 5175
Hardy, J.R., Projection problems and wave refraction 22 7083
Hargreaves, J.K., Eclipse ionospheric electron content *[l]* 15 4994
Harlan, R.B., Eotvos corrections for airborne gravimetry 14 4675
Harre, W., Two-error regression treatment 18 6071
Harrington, J.V., Mariner 4 radio occultation *[l]* 9 3039
Harrington, J.V., Solar wind turbulence 23 7221
Harris, T.B., Atmospheric carbon dioxide at 500 and 700 mb 14 4511
Harrison, C.G.A., Formation of oceanic magnetic anomalies 6 2137
Harrison, C.G.A., Magnetic anomalies in NE Pacific 18 5951
Harrison, C.G.A., Pacific Ocean seamount 24 7713
Harrison, J.C., LaCoste-Romberg shipboard gravity meters 6 2163
Harrison, W., Empirical equation for longshore current velocity 22 6929
Hasegawa, Y., Surface waves and existence of magma pockets *[l]* 10 3349
Haser, L., Auroral electric field 1 21
Haskin, L.A., Rare earth abundances 18 6085
Haskin, M.A., Rare earth abundances 18 6085
Hatherton, T., Andestic volcanism and seismicity in New Zealand 14 4615
Hatherton, T., Gravity across Alpine fault, New Zealand 16 5343
Hatton, C.J., Barometric coefficients 23 7503
Hayes, D.E., Aleutian arc magnetics 14 4637
Hayes, D.E., Sea-floor spreading in the Gulf of Alaska 20 6571
Haymes, R.C., Planetary X rays 3 867
Haymes, R.C., *Sq* current measurement 5 1771
Hazelworth, J.B., Water temperature variations from hurricanes 16 5105
Healy, J., Decoupling of seismic waves by cavity 18 5995
Heckman, H.H., Geomagnetic field models 11 3441
Hedge, C.E., Age of precambrian events, Colorado 6 2277
Hegblom, E.R., Auroral electrons *[l]* 9 3072
Heikkila, W.J., Ionospheric electron concentration measurements 11 3511
Heirtzler, J.R., Magnetic anomalies in the Pacific 6 2069
Heirtzler, J.R., Magnetic anomalies in South Atlantic 6 2087
Heirtzler, J.R., Magnetic anomalies in Indian Ocean 6 2101
Heirtzler, J.R., Magnetic anomalies and geomagnetic reversals 6 2119
Heirtzler, J.R., Spatial coherence of geomagnetic rapid variations 6 2143
Heirtzler, J.R., Aeromagnetic survey of Norwegian Sea 14 4583
Heirtzler, J.R., Aleutian arc magnetics 14 4637
Heppner, J.P., Sudden commencement in magnetotail 21 6699
Heritage, J.L., Transequatorial ionosphere VHF characteristics 7 2469
Hermance, J.F., Deep electrical structure under Iceland 12 3797
Herrin, E., Density of a homogeneous moon *[l]* 12 3974
Herron, E.M., Magnetic anomalies in the Pacific 6 2069
Herron, E.M., Magnetic anomalies and geomagnetic reversals 6 2119
Herron, E.M., Seismic study of sediments 14 4701
Hess, H.H., Hypothesis of spreading ocean floor 20 6569
Hetherington, N., Roughness and microwave emissivity 22 7009
Heuring, F.T., Magnetic intensity at 1100 km 7 2495
Heuring, F.T., Geomagnetic harmonic series for 1100 km 7 2505
Heymann, D., Hydrogen 3 and helium 3 in stony meteorites *[l]* 14 4784
Hill, E.L., Pressure pulse from a lightning stroke 6 1883
Hill, R.D., Tortuosities of lightning channels 6 1897
Hill, R.W., X-ray airglow in daytime sky *[l]* 22 7149
Hinton, B.B., Atomic nitrogen *[l]* 13 4425
Hoare, R.A., Thermocline convection in Antarctica 2 607
Hoch, R.J., Stable auroral red arc 13 4213
Hodge, P.W., Extraterrestrial origin of particles 24 7589
Hodges, R.R.,Jr., Planetary exospheres 23 7307
Hoffman, R.A., Field-aligned electron bursts 19 6201
Hoffman, R.A., Ring current distributions 21 6711
Holloway, J.R., Generation of H_2O-CO_2 mixtures *[l]* 20 6598
Hollweg, J.V., Solar wind turbulence 23 7221
Hollweg, J.V., Lunar limb shock 23 7269
Holt, H.E., Surveyor 3—television observations 12 3989
Holt, S.S., Solar flare X rays *[l]* 1 434
Holzer, R.E., Search coil magnetometer (ATS) 17 5769
Holzer, T.E., Polar wind *[l]* 21 6846
Hones, E.W.,Jr., Solar flare X rays *[l]* 1 434
Hones, E.W.,Jr., Magnetotail electron bursts 19 6189
Hones, E.W.,Jr., Adiabatic motion of auroral particles *[r]* 17 5807
Hones, E.W.,Jr., Electrons in magnetotail 23 7339
Hood, P.J., Aeromagnetic profiles across Reykjanes ridge 24 7637
Hook, J.L., Electron content in aurora 7 2363
Horai, K., Heat flow data 20 6608
Horai, K., Seismic travel-time anomalies 24 7577
Horibe, Y., Deuterium content in the ocean 4 1239
Horn, B.M., Acoustical and physical properties of deep-sea cores 6 1939
Horn, D.R., Acoustical and physical properties of deep-sea cores 6 1939
Horn, J.D., Tower shadow effect 6 1869
Horvath, J.J., Observations of mesosphere 14 4475
Hosler, C.R., Climatology of atmospheric radon concentrations 4 1155
Hosmer, J.P., Projection and grid for wave studies 16 5125

Hosseinieh, H.H., Midlatitude electron content *[l]* 23 7530
Hotta, H., Crustal structure of Phillipine Sea 10 3143
Houston, A., Nonlinear periodic capillary-gravity waves 20 6545
Houtz, R., Velocity of deep-sea sediments from sonobuoy data 8 2615
Houtz, R.E., Deep-sea sediment velocity determination 8 2597
Houtz, R.E., Crustal structure of Phillipine Sea 10 3143
Huang, J.H., Fluid flow in porous media 24 7685
Hudson, P.D., POGO ion chamber 19 6285
Huffman, R.E., Upper atmosphere composition measurements 23 7419
Hughes, L.R., Transauroral propagation 19 6337
Hugill, J., Ionospheric electron concentration measurements 11 3511
Hundhausen, A.J., Interplanetary shock waves 1 43
Hundhausen, A.J., Earth's bow shock 1 51
Hundhausen, A.J., Solar wind electrons *[l]* 15 4999
Hundhausen, A.J., Interplanetary ionization state 17 5485
Hundhausen, A.J., Solar wind and magnetosheath (ATS) 17 5761
Hunt, G.R., Infrared emission from mat surfaces 18 6039
Hunt, T.M., Gravity across Alpine fault, New Zealand 16 5343
Hunten, D.M., Low atmosphere of Venus *[l]* 3 1093
Hunten, D.M., Metastable $O_2(^1\Delta)$ in *D* region 7 2421
Hunten, D.M., Infrared dayglow measurements 9 2885
Hunten, D.M., Regulus occultation by Venus *[l]* 13 4446
Hunten, D.M., CO_2 on Mars 15 4795
Hunten, D.M., Oxygen dayglow 15 4813
Hurley, J.P., Magnetic field confined by warm plasma *[d]* 11 3602
Hurley, P.M., Isochrons for Grenville Province 22 7107
Husak, A., Basalt strength in ultra-high vacuum 6 2237
Hutton, R.E., Lunar surface mechanical properties 22 7169
Hyman, E., Retarding potential analyzer data 13 4315

Ichikawa, K., Crustal structure of Philippine Sea 10 3143
Imamoto, S.S., Energetic electrons at synchronous altitude 15 4915
Imamoto, S.S., Boundary of electrons (ATS) 17 5743
Imhof, W.L., Electron precipitation 13 4167
Inman, D.L., Wave 'set-down' and set-up 8 2569
Inouye, G.T., Earth's bow shock 1 51
Isacks, B., Seismology and new global tectonics 18 5855
Isler, R.C., Ultraviolet in aurora 11 3353

Jackson, E.D., Chemical composition of lunar surface 24 7621
Jaffe, L.D., Surveyor 3—introduction 12 3981
Jaffe, L.D., Surveyor 3—principal scientific results 12 3983
Jaffe, L.D., Surveyor 3—lunar surface mechanical properties 12 4081
Jaffe, L.D., Surveyor 6 lunar mission 16 5297
Jaffe, L.D., Introduction: Surveyor 5 science results 22 7161
Jaffe, L.D., Principal science results from Surveyor 5 22 7165
Jaffe, L.D., Lunar surface mechanical properties 22 7169
James, D.E., Crustal structure of the Middle Atlantic states 6 1983
Jiménez, J., Low-energy cosmic rays 5 1593
Jiracek, G.R., Electromagnetic reflection from lunar model 4 1355
Johnson, F.S., Lunar magnetosphere 5 1523
Johnson, F.S., Planetary exospheres 23 7307
Johnson, H., Radiocerium concentrations in ground-level air 10 3129
Johnson, K.W., Stratospheric warming of 1967-1968 *[l]* 14 4775
Johnson, R.G., Auroral electron precipitation 3 969
Johnson, R.H., Geographic variation of Sofar speed and axis depth 14 4695
Joki, E.G., Electron in aurora 7 2363
Jokipii, J.R., Magnetosheath electron pulses 3 931
Jokipii, J.R., Cosmic-ray anistropy 11 3367
Jokipii, J.R., Cosmic-ray diffusion 17 5495
Jokipii, J.R., Cosmic-ray diffusion *[d]* 21 6864
Jones, A.V., Infrared dayglow measurements 9 2885
Jones, B.P., Density vs depth of lunar outermost layer 24 7631
Jones, C.B., Surveyor 3—lunar thermal characteristics 12 4095
Jones, D.E., Interplanetary magnetic field 1 61
Jones, D.L., Shock wave from lightning discharge 10 3121
Jones, D.L., A dominant 200—Hertz peak in the acoustic spectrum of thunder *[l]* 14 4776
Jones, D.L., Flare-generated shock waves 15 4875
Jones, D.L., Paleomagnetism in kimberlite 22 6937
Jones, F.C., Moving magnetic field lines 17 5505
Jones, L.M., Atomic nitrogen *[l]* 13 4425
Jones, R.H., Surveyor 3—lunar surface mechanical properties 12 4081
Jones, R.H., Lunar surface mechanical properties 22 7169
Jones, R.C., Stroke core diameter *[l]* 2 809
Jørgensen, T.S., Interpretation of auroral hiss 3 1055
Justus, C.G., Energy balance of turbulence *[r]* 1 455
Justus, C.G., Atmospheric tides at 90 to 120 km 2 467
Justus, C.G., 100-km winds *[l]* 23 7535

Kahalas, S.L., Starfish MHD wave propagation *[l]* 5 1858
Kahle, A.B., Rayleigh-scattering atmosphere 23 7511
Kakli, G.M., High-altitude winds 15 4969
Kanamori, H., Thermal diffusivity of minerals 300-1100 degrees K 2 595
Kanamori, H., Thermal diffusivity of $MgSiO_4$, $FeSiO_4$, and NaCl 14 4727
Kanamori, H., Shock-wave equations of state 20 6477
Kanellakos, D.P., Ionospheric disturbance 3 1039
Kaneoka, I., Paleomagnetism and Ka-Ar ages *[r]* 4 1504
Kaneoka, I., Ages and magnetic properties of basalts 2 711
Kasai, G.H., Plasma phenomena in comets 1 259
Kastner, J., Neutrons from alpha particles in soils 10 3135
Kasprzak, W.T., Thermosphere neutral composition 21 6765
Kasprzak, W.T., Thermosphere composition 23 7291
Kaufmann, P., Lower ionosphere conductivity gradients during SID ℰ 7 2487
Kavanagh, L.D.,Jr., Revised (B,L) coordinate system 1 185
Kavanagh, L.D.,Jr., Radial diffusion coefficients 9 2959
Kavanagh, L.D.,Jr., Plasma flow 17 5511
Keeling, C.D., Atmospheric carbon dioxide at 500 and 700 mb 14 4511
Keeling, C.D., Carbon dioxide in surface ocean waters, 3 13 4529
Keeling, C.D., Carbon dioxide in surface ocean waters, 4 14 4543
Keil, K., Enstatite chondrites 22 6945
Keith, J.E., Neutron monitor yield functions 1 353
Keller, G.H., Profile from Kermadec trench to Chile *[l]* 22 7154
Keller, G.E., Ionic mobilities 11 3483
Kelley, J.J.,Jr., Vertical gradient of net oxidant near ground *[l]* 10 3328
Kendall, K.R., Airglow spectrum *[l]* 1 426
Kendall, P.C., Ring current effects 11 3377
Kennedy, G.C., Melting curves of Li, Na, K, and Rb 8 2795
Kennel, C.F., Solar wind anisotropies and instabilities 19 6149
Kennel, C.F., Magnetosonic wave propagation 23 7429
Kennel, C.F., High-beta shocks *[r]* 23 7539
Kenney, J.F., Micropulsations and magnetosphere 21 6737
Kent, G.S., Stratospheric aerosol 24 7553
Kester, D.R., Oxygen saturation in surface waters 16 5421
Khan, M.A., Theory for hydrostatic figure of earth 16 5335
Kimura, I., VLF noise triggering *[l]* 1 445
King, C.-Y., Model seismicity: Parameters and relations 4 1399
King, E.A.,Jr., Martha's Vineyard and Georgia tektites... comment *[d]* 8 2835
Kinoshita, W.T., March 1965 eruption of Kilauea volcano 10 3181
Kirk, H.K., Seismic refraction studies 6 2175
Kirkpatrick, A.W., Refractive index microstructure 20 6425
Kirsten, T., Rare gases in solidifying enstatite melts 8 2807
Klein, M.M., Particle diffusion 5 1829
Klement, W.,Jr., Quartz inversion: Thermodynamics of lambda transition 6 2249
Klement,W.,Jr., High-low quartz inversion 14 4711
Klobuchar, J.A., Electron content *[l]* 19 6373
Klobuchar, J.A., Midlatitude electron content *[l]* 23 7530
Knaflich, H.B., Micropulsations and magnetosphere 21 6737
Knopoff, L., Apparent initial phase of Rayleigh waves 2 755
Knopoff, L., Model seismicity: Parameters and relations 4 1399
Knowles, R.R., Paleomagnetism of Mauch Chunk formation 20 6515
Knudsen, W.C., *F*-region electrons ℰ 3 841
Knudsen, W.C., F_2 electron enhancement 19 6275

Knudsen, W.C., Equatorial VLF hiss *[l]* 19 6384
Ko, H.Y., Surveyor 3—lunar surface mechanical properties 12 4081
Ko, H.Y., Lunar surface mechanical properties 22 7169
Koch, F., Contamination of lunar surface samples 10 3231
Koehler, R.L., Solar plasma streams 15 4883
Kohl, D.A., Fair weather electric field noise 6 1913
Kondo, Y., Nighttime Lyman-alpha emission *[r]* 11 3600
Kondo, Y., Neutral hydrogen and charged particle interaction *[r]* 13 4457
Kondo, Y., Lyman-alpha emission *[r]* 19 6403
Konradi, A., Rapid magnetospheric flux increases 11 3449
Kovach, R.L., Strain and strain energy 18 5981
Krankowsky, D., Thermosphere neutral composition 21 6765
Krankowsky, D., Thermosphere composition 23 7291
Krassovsky, V.I., Lyman-alpha emission *[d]* 19 6402
Kreiss, W.T., Precipitation over ocean *[d]* 22 7145
Krider, E.P., Acoustic output of a long spark *[l]* 2 815
Krider, E.P., Power and energy dissipation in lightning *[l]* 10 3335
Krimigis, S.M., Magnetospheric and magnetotail protons 1 143
Krimigis, S.M., Particle radiation near Venus *[l]* 1 421
Krishnamurthy, B.V., Whistler cutoff and ring current *[l]* 5 1853
Kroening, J.L., Transport of material across the tropopause *[l]* 16 5463
Krogh, T.E., Isochrons for the Grenville Province 22 7107
Krogstad, R.S., Strains across Kern River fault *[l]* 18 6143
Krokosky, E.M., Basalt strength in ultra-high vacuum 6 2237
Kruger, S.T., Hydrogen 3 and helium 3 in stony meteorites *[l]* 14 4784
Ku, T.-L., Dating coral by the Pa^{231} method 6 2271
Kuiper, G.P., Surveyor 3—lunar theory and processes 12 4115
Kupferman, R.A., VLF perturbations due to nuclear explosion 1 393
Kupperian, J.E.,Jr., Nighttime lyman-alpha emission *[r]* 11 3600
Kupperian, J.E.,Jr., Neutral hydrogen and charged particle interaction *[r]* 13 4457
Kupperian, J.E.,Jr., Lyman-alpha emission *[r]* 19 6403
Kuroda, P.K., Radiocerium concentrations in ground-level air 10 3129
Kuroda, P.K., Fission xenon in chondrites 12 3957
Kushiro, I., Magmas formed by partial zone melting 2 619
Kushiro, I., Melting of peridotite 18 6023

Lachenbruch, A.H., Heat flow from lunar craters *[d]* 2 822
Lachenbruch, A.H., Heat flow and water temperature fluctuations 18 5829
Lachenbruch, A.H., Geothermal model of Sierra Nevada 22 6977
LaCoste, L.J.B., LaCoste-Romberg shipboard gravity meters 6 2163
Lagos, C.P., Thermosphere gas dynamics *[e]* 13 4299
Laird, A.R., *F*-region concentration variations 23 7399
Lakner, J.F., Triaxial compression data on granodiorite 4 1305
Lamar, D.L., Early earth-moon history 14 4767
Langworthy, B.M., Mariner 4 radio occultation *[l]* 9 3039
Lansinger, J.M., VHF refraction in aurora *[l]* 9 3053
Lansinger, J.M., Radio-star visibility fades 11 3565
Lanzerotti, L.J., Electron response during magnetic storm *[l]* 1 438
Lanzerotti, L.J., Outer-zone electrons *[l]* 13 4388
Lanzerotti, L.J., Trapped electrons 17 5673
Lanzerotti, L.J., Energetic electrons (ATS) 17 5751
Large, D.B., Earth-ionosphere cavity 13 4335
Larochelle, A., Paleomagnetism of Monteregian hills 10 3239
Larrabee, J.C., Upper atmosphere composition measurements 23 7419
Larson, E.E., Magnetic stability in volcanic rocks 12 3787
Larson, E.E., Magnetic paleointensity 22 7031
Larsen, T.R., Earth-ionosphere cavity resonances *[l]* 15 4986
Latham, D.J., Fluctuating radar echoes *[l]* 22 7137
Latham, G.V., Ocean bottom microseisms 12 3945
Lazarus, A.J., Pioneer 7 magnetosphere observations 7 2399
Lazarus, A.J., Geomagnetic sudden impulses 15 4869
Ledley, B.G., Sudden commencement in magnetotail 21 6699
Lee, H.S., High-power wave interaction *[l]* 13 4427
Lee, H.S., High-power waves *[r]* 23 7543
Leite, R.J., Atomic nitrogen *[l]* 13 4425
LeLevier, R.E., Mesospheric electron concentrations 1 27
LeMehaute, B., Mass transport in cnoidal waves 18 5973
Lenoir, W.B., Mesospheric temperature profile 1 361
Lenoir, W.B., Microwave emission in stratosphere 4 1119
Leo, R.E., Electron content near magnetic equator 7 2459
Le Pichon, X., Magnetic anomalies in Indian Ocean 6 2101
Le Pichon, X., Magnetic anomalies and geomagnetic reversals 6 2119
Le Pichon, X., Deep-sea sediment velocity determination 8 2597
Le Pichon, X., Velocity of deep-sea sediments from sonobuoy data 8 2615
Le Pichon, X., Sea-floor spreading and continental drift 12 3661
Lerche, I., Magnetic field confined by warm plasma *[r]* 11 3602
Lerche, I., Hydromagnetic instability *[r]* 15 5017
Lesser, R.M., Oceanic numerical modeling, 1 16 5081
Leventhal, J.S., Tritium geophysics from 1961-1962 nuclear tests 8 2715
Lewak, G.J., Ionospheric resonances *[l]* 19 6379
Lezniak, T.W., Magnetopause electrons (ATS) 17 5733
Libby, W.F., Tritium geophysics from 1961-1962 nuclear tests 8 2715
Libby, W.F., Strontium 90 residence time and inter-hemispheric mixing 12 3611
Liebermann, R.C., Elastic constants of hematite 20 6585
Liemohn, H.B., Micropulsations and magnetosphere 21 6737
Lilley, F.E.M., Elastic wave motion and nonuniform magnetic field 20 6527
Lin, R.P., Lunar shadowing *[l]* 9 3066
Lincoln, J.V., IUWDS calendar for 1968 *[l]* 1 460
Lincoln, J.V., Geomagnetic and solar data 1 465; 3 1117; 5 1862; 7 2548; 9 3093; 11 3609; 13 4459; 15 5019; 17 5811; 19 6405; 21 6868; 23 7544
Lindeken, C.L., Equilibrium between Radon 222 and its daughters in the atmosphere *[l]* 8 2823
Lindsey, R.D., South Atlantic anomaly 11 3477
Lindstrom, P.J., Geomagnetic field models 11 3441
Linlor, W.I., Electromagnetic reflection from lunar model 4 1355
Little, E.M., Day length versus date at Arctic Circle 2 735
Liu, H.-S., Synchronous rotation of moon *[r]* 6 2305
Livingston, P.M., Night helium glow *[l]* 3 1107
Llewellyn, E.J., Infrared dayglow measurements 9 2885
Lloyd, R.M., Oxygen isotope behavior 18 6099
Lockwood, J.A., Solar flare effect 13 4247
Lockwood, J.A., Cosmic-ray neutron flux measurements 21 6849
Loeb, L.B., Stepped leader lightning stroke 18 5813
Lootens, H.T., Electron concentration profiles *[l]* 3 1114
Lord, H.C., Ion implantation into minerals 16 5271
Loughridge, M.S., Ocean bottom reflections 12 3905
Lovitt, J.E., Vertical distribution of ozone 16 5073
Lucas, J.W., Surveyor 3—principal scientific results 12 3983
Lucas, J.W., Surveyor 3-lunar thermal characteristics 12 4095
Lucas, J.W., Principal science results from Surveyor 5 22 7165
Lucas, J.W., Lunar surface temperatures 22 7209
Ludwig, J.I., Crustal structure of Philippine Sea 10 3143
Ludwig, W.J., Refraction measurements, SE African margin *[e]* 12 3707
Luedemann, H.D., Melting curves of Li, Na, K, and Rb 8 2795
Lüst, R., Auroral electric field 1 21
Lutomirski, R.F., Wave generation 15 4943
Luyendyk, B.P., Magnetic anomalies in NE Pacific 18 5951

Mabee, R.S., Air densities from jet radii 9 3017
MacGregor, I.D., Depth of origin of basaltic magmas 12 3737
Mack, H., Density of a homogeneous moon *[l]* 12 3974
Mackerras, D., Comparison of lightning discharge processes 4 1175
Macmahon, A.B., High-beta shocks *[d]* 23 7535
Madelaine, G., Nuclei of condensation: formation and evolution 14 4487
Maeda, H., Ionospheric currents, 1 3 1077
Maehlum, B.N., Auroral electrons and the auroral electrojet 5 1679
Maehlum, B.N., Polar electron fluxes 11 3459
Maehlum, B.N., Auroral precipitation and electrojet *[r]* 19 6394
Maguire, J.J., Energy of geomagnetic disturbances 11 3395
Maguire, J.J., Plasma flow at magnetopause (ATS) 17 5719

Mahajan, K.K., Backscatter study of electron content 7 2477
Malone, F.D., Currents in Lake Michigan 22 7065
Mamuro, T., Fallout particles in the ground-level air 12 3637
Manchester, R.N., Correlation of micropulsations *é* 11 3549
Manghnani, M.H., Ultrasonic interferometric measurements on obsidian 2 824
Mansinha, L., Earthquakes and motion of rotation pole 24 7661
Manson, A.H., High-power waves *[d]* 23 7540
Mantis, H.T., Equation for large-scale motions 16 5045
Mantis, H.T., Transport of material across the tropopause *[I]* 16 5463
Manuel, O.K., Iodine in ocean sediments *[I]* 6 2302
Manuel, O.K., Terrestrial abundance of noble gases *[I]* 10 3331
Mao, H., Isothermal compression of Fe-Ni alloys to 300 300 kb 14 4717
Marbach, J.R., South Atlantic anomaly 11 3477
Marchello, J.M., Onset of wind-driven waves 16 5133
Marovich, E., Stable auroral red arc 13 4213
Marshall, B.V., Heat flow and water temperature fluctuations 18 5829
Mason, C.J., Atomic nitrogen *[I]* 13 4425
Masuda, A., Lanthanides in Mohole basalt 16 5425
Masursky, H., Surveyor 3-lunar theory and processes 12 4115
Mateer, C.L., Stratospheric dust and color of twilight sky 22 6897
Matsunami, T., Fallout particles in the ground-level air 12 3637
Matsushima, S., Vertical distribution of dust *[d]* 9 3085
Matsushita, S., Geomagnetic pulsations 1 267
Matsushita, S., Blanketing sporadic *E* 5 1641
Matumoto, T., Microearthquakes *[I]* 14 4789
Mauersberger, K., Neutral constituents of thermosphere 3 1071
Mayr, H.G., Electron temperature and concentration at 1000 km 5 1607
Mayr, H.G., Magnetospheric temperature distribution 15 4851
Mazeika, P.A., South Equatorial Current 18 5819
McAfee, J.R., Ray trajectories in plasma 17 5577
McClaine, L.A., Volcanic clouds 16 5235
McConnell, L.T., Vortex-stabilized electrical discharges 8 2559
McConnell, R.K.,Jr., Volcanic clouds 16 5235
McConnell, R.K.,Jr., Viscosity of the mantle 22 7089
McCord, T.B., Retrograde satellites in the solar system 4 1497
McCoy, J.E., Time variations in interplanetary radiation intensity 9 2911
McCoy, J.E., POGO ion chamber 19 6285
McCracken, K.G., Microburst phenomena, 1 7 2333
McCracken, K.G., Microburst phenomena, 2 7 2345
McCracken, K.G., Cosmic-ray anisotropies 13 4159
McDiarmid, I.B., Auroral alpha particles 7 2307
McDiarmid, I.B., Auroral alpha particles *[r]* 19 6388
McDiarmid, I.B., High-latitude electron boundary 23 7237
McDonald, K.L., Recent trends in earth's magnetic field 6 2057
McElhinny, M.W., Paleomagnetism of African carboniferous varves 2 689
McElroy, J.D., Velocity and temperature profiles in Lake Superior *[I]* 18 6122
McElroy, M.B., Upper atmosphere of Venus 5 1513
McElroy, M.B., Metastable $O_2(\Delta)$ in *D* region 7 2421
McElroy, M.B., Photoelectrons 13 4199
McElroy, M.B., Regulus occultation by Venus *[I]* 13 4446
McEwen, D.J., Alouette VLF at the plasmapause 9 2929
McGovern, W.E., Jupiter and Saturn exospheres *[I]* 19 6361
McGovern, W.E., Hydrogen on Venus *[I]* 19 6364
McGowan, J.W., Topside He_2^+ *[I]* 15 5008
McIlwain, C.E., Trapped particle acceleration 1 153
McInnes, B.A., Scale height variations 17 5603
McKenzie, D.P., Heat flow inside Pacific island arcs 10 3173
McMahon, B.E., Magnetic paleointensity 22 7031
McNeill, F.A., Magnetospheric amplification *[I]* 21 5860
McPherron, R.L., Studies of magnetospheric substorm, 1 5 1685
McPherron, R.L., Studies of magnetospheric substorm, 2 5 1697
McPherron, R.L., Studies of magnetospheric substorm, 3 5 1715
McTaggart-Cowan, J.D., Vertical gradient of net oxidant near ground *[I]* 10 3328
Meason, J.L., Rare gases in chondrites *[I]* 6 2297
Mechtly, E.A., Standing waves in *E* region 13 4291
Mechtly, E.A., Lower ionosphere electron concentration 19 6243
Meecham, W.C., Nuclear-generated infrasound 1 377
Megrue, G.H., Rare gas chronology of hypersthene acondrites and pallasites 6 2027
Mei, C.C., Water wave theory 14 4555
Meister, L.J., Strain and strain energy 18 5981
Meister, R., Rate of 15-kb phase transition in limestone 18 6117
Meloy, T., Lunar surface materials *[I]* 6 2299
Melson, W.G., Mid-Atlantic ridge volcanism and metamorphism 18 5925
Melzner, F., Auroral electric field 1 21
Mende, S.B., Electric fields parallel to magnetic field lines 3 991
Mendes, A., Lower ionosphere conductivity gradients during SID *é* 7 2487
Mentzoni, M., ELF and VLF waves *[I]* 13 4439
Mentzoni, M., Ionospheric *G* factor *[I]* 13 4444
Merifield, P.M., Early earth-moon history 14 4767
Meyer, B., Auroral electric field 1 21
Meyerhoff, A.A., Hypothesis of spreading ocean floor 20 6563
Michel, F.C., Magnetic field behind moon 5 1533
Michel, F.C., Relativistic energies 13 4135
Michel, F.C., Lunar wake 23 7277
Mickey, W., Decoupling of seismic waves by cavity 18 5995
Midgley, J.E., Lunar magnetosphere 5 1523
Mifflin, R., Roughness and microwave emissivity 22 7009
Mihalov, J.D., Geomagnetic tail 3 943
Mihalov, J.D., Geomagnetic tail gradient *[I]* 21 6837
Miller, A., Vertical distribution of ozone 16 5073
Miller, R.E., Ultraviolet in aurora 11 3353
Miller, R.L., Run-up of undular and fully developed bores 14 4497
Millhollen, G.L., Generation of H_2O–CO_2 mixtures *[I]* 20 6598
Millman, G.H., Ionospheric phase fluctuations *[I]* 13 4434
Mikumo, T., Atmospheric pressure waves and the Alaskan earthquake 6 2009
Mitchell, R.L., Oxygen absorption in lower atmosphere 10 3113
Miyata, M., Sea level observations *[I]* 12 3965
Mizutani, H., Thermal diffusivity of minerals 300–1100 degrees K 2 595
Mizutani, H., Thermal diffusivity of $MgSiO_4$, $FeSiO_4$, and NaCl 14 4727
Moe, C.R., Electron content in aurora 7 2363
Monahan, E.C., Sea spray 4 1127
Monro, P.E., Standing waves in *E* region 13 4291
Montgomery, D., Electrostatic wave acceleration *[I]* 23 7524
Montgomery, M.D., Electrons in the magnetotail 3 871
Montgomery, M.D., Solar wind electrons *[I]* 15 4999
Mooers, C.N.K., Continental shelf waves off Oregon 2 549
Mooers, C.N.K., Fourier decomposition of the Gerstner wave 18 5843
Morgan, W.J., Rises, trenches, great faults, and crustal blocks 6 1959
Morris, E.C., Surveyor 3—television observations 12 3989
Morrison, H.F., Magnetotelluric impedance 8 2769
Moss, R.W., Strains across Kern River fault *[I]* 18 6143
Moss, S.J., Retarding potential analyzer data 13 4315
Mozer, F.S., Auroral particle fluxes 3 999
Mudie, J.D., Magnetic anomalies in NE Pacific 18 5951
Mueller, I.I., Vertical deflection of gravity 22 6869
Müller, D., Neutral constituents of thermosphere 3 1071
Muller, R.H., Temperature of maximum density of water in capillaries *[I]* 10 3345
Mulligan, J.C., Heat transfer in frost and snow 8 2663
Murata, H., Ionospheric currents, 1 3 1077
Murauchi, S., Crustal structure of Philippine Sea 10 3143
Murayama, T., Neutral sheet electrons 3 891
Murphy, B.L., Starfish MHD wave propagation *[I]* 5 1858
Murphy, C.H., Ionospheric winds 9 3005
Musgrave, B.C., Tritium content of atmospheric methane and ethane 4 1167
Muzzie, J.L.R., Ion whistlers *[I]* 23 7526

Nafe, J.E., Correlation between ocean current and ocean tide 6 1921
Nafe, J.E., Refraction measurements, SE African margin *é* 12 3707
Nagy, A.F., Protonosphere 19 6259

Nathan, K.V.S.K., Cosmic-ray diffusion 1 163
Naughton, J.J., He and Ar in ultramafic inclusions 14 4601
Nayudu, Y.R., Age of cobb seamount *[l]* 12 3977
Nelson, J.D., Lunar soil 12 3747
Nelson, L.N., Charge transfer by lightning 18 5967
Ness, N.F., Pioneer 7 magnetosphere observations 7 2399
Ness, N.F., Ambiguous data from fluxgate magnetometer *[d]* 9 3077
Ness, N.F., Lunar magnetic wake 11 3421
Ness, N.F., Cosmic-ray anisotropies 13 4159
Ness, N.F., Lunar magnetic field *[r]* 19 6390
Ness, N.F., Lunar wake magnetic field 21 6723
Neuss, H., Auroral electric field 1 21
Newell, R.E., Thermosphere gas dynamics ✐ 13 4299
Newkirk, L.L., Electron diffusion 3 1013
Newkirk, L.L., Radial electron diffusion 23 7231
Newton, R.R., Decrease in gravitational constant *G* 12 3675
Ney, E.P., Airglow observations from OSO–B2 satellite 3 857
Nier, A.O., Thermosphere neutral composition 21 6765
Nier, A.O., Thermosphere composition 23 7291
Nimit, V.T., Electron content near magnetic equator 7 2459
Nishida, A., Geomagnetic D_p 2 fluctuations 5 1795
Nishida, A., *DP* 2 and interplanetary field 17 5549
Normark, W.R., Structure of Hawaiian arch 22 6991
Norris, R.A., Geographic variation of Sofar speed and axis depth 14 4695
Northrop, J., Ocean bottom reflections 12 3905
Northrop, J., Submarine topographic echoes 12 3909
Northrop, T.G., Charged particle energization 1 83
Northrop, T.G., Plasma waves from earth's bow shock 5 1543
Norton, R.B., Molecular oxygen *[l]* 17 5798
Norton, R.H., Surveyor 3–principal scientific results 12 3983
Norton, R.H., Principal science results from Surveyor 5 22 7165
Nowroozi, A.A., *Q* values from free oscillations of earth 4 1407
Nowroozi, A.A., Correlation between ocean current and ocean tide 6 1921
Nowroozi, A.A., Ocean bottom microseisms 12 3945
Nozumi, Y., Prefrontal rain bands in the warm sector 2 487
Nydal, R., Radiocarbon transfer in nature 12 3617

Oberbeck, V.R., Thickness of lunar surface layer 16 5247
O'Brien, B.J., Auroral electrons and the auroral electrojet 5 1679
O'Brien, B.J., Auroral alpha particles 13 4185
O'Brien, B.J., Auroral precipitation and electrojet *[r]* 19 6394
O'Brien, P.N.S., Lake Superior crustal structure 8 2669
O'Connell, R.J., Movement of M discontinuity *[d]* 20 6601
O'Connor, J.T., Mineral stability at the Martian surface 16 5301
Octzel, G.N., Diameter of lightning 6 1889
Offermann, D., Neutral constituents of thermosphere 3 1071
Ogawa, M., O_2 absorption line ✐ 21 6759
Ogilvie, K.W., Auroral electron energy spectra 7 2325
Ogilvie, K.W., Magnetosheath-solar wind boundary 19 6167
Ogilvie, K.W., Plasma observations 21 6809
Ogura, N., Deuterium content in the ocean 4 1239
O'Keefe, J., Surveyor 3–lunar theory and processes 12 4115
O'Keefe, J.A., Lunar surface materials *[l]* 6 2299
Olbert, S., Dessler–Parker–Sckopke relation 3 1115
O'Leary, B.T., Composition of Venus clouds 2 665
Oliven, M.N., Microburst phenomena, 1 7 2333
Oliven, M.N., Microburst phenomena, 2 7 2345
Oliven, M.N., Microburst phenomena, 3 7 2355
Oliver, J., Microearthquakes *[l]* 14 4789
Oliver, J., Seismology and new global tectonics 18 5855
Olson, J.V., Search coil magnetometer (ATS) 17 5769

Oltman, B.G., Neutrons from alpha particles in soils 10 3135
Opdyke, N.D., Paleomagnetism of African Carboniferous varves 2 689
Opdyke, N.D., Paleomagnetism of Mauch Chunk formation 20 6515
Opp, A.G., ATS boundary crossing 17 5697
Orange, A.S., Electrical resistivity changes in stressed rocks 4 1433
Orange, A.S., Effects of pressure on electrical resistivity 16 5407
Ormes, J.F., Cosmic-ray spectra and modulations 13 4231
Orville, R.E., Pressure pulse from a lightning stroke *[d]* 20 6595
Orville, R.E., Spectrum of the lightning stepped leader 22 6999

Ossakow, S.L., Anomalous resistivity *[l]* 19 6366
Oster, A.L., Electron-ion densities between 40 and 80 km *[l]* 13 4421
Owens, H.D., Electron flux contours 1 199
Oxburgh, E.R., Geotherm distribution during mantle convection 8 2643
Ozima, M., Paleomagnetism and Ka-Ar ages *[r]* 4 1504
Ozima, Minoru, Ages and magnetic properties of basalts 2 711
Ozima, Mituko, Ages and magnetic properties of basalts 2 711

Packer, D.M., Night airglow O I intensity profiles 17 5535
Page, R., Focal depths of aftershocks 12 3897
Palmer, C.E., Strontium 90 residence time and interhemispheric mixing 12 3611
Palmer, H.C., Paleomagnetism of North Mountain Basalt 8 2811
Paluch, I., Collision efficiencies of hydrometeors 6 2035
Papa, D.C., Microwave emission in stratosphere 4 1119
Panofsky, H.A., Structure constant for index of refraction 18 6047
Park, J.K., Magnetization of Hurley Creek formation 2 697
Parker, E.N., Confinement of magnetic field by ions *[r]* 7 2540
Parker, E.N., Cosmic-ray anisotropy 11 3367
Parker, E.N., Confinement of magnetic field by ions *[r]* 11 3607
Parker, E.N., Low-energy cosmic rays *[l]* 21 6842
Parkin, D.W., Cosmic dust 5 1837
Parks, G.K., Studies of magnetospheric substorm, 1 5 1685
Parks, G.K., Studies of magnetospheric substorm, 2 5 1697
Parks, G.K., Studies of magnetospheric substorm, 3 5 1715
Parks, G.K., Substorm electron acceleration *[l]* 17 5786
Parry, L.G., Magnetic properties of ilmenite particles 4 1269
Patel, V.L., Sudden impulses in geomagnetotail 11 3407
Paulikas, G.A., Low-energy cosmic-ray cutoffs 1 87
Paulikas, G.A., Energetic electrons at synchronous altitude 15 4915
Paulikas, G.A., Solar cosmic rays 15 4927
Paulikas, G.A., Boundary of electrons (ATS) 17 5743
Peale, S.J., Zodiacal light 9 3025
Pearce, J.B., Lyman alpha near Venus *[l]* 7 2541
Peck, D.L., March 1965 eruption of Kilauea volcano 10 3181
Peebles, G., Nuclear explosion radio pulse 1 405
Peebles, G.H., Nuclear radio signal *[r]* 19 6401
Perkins, F.W., Photoelectrons in the ionosphere 1 97
Perkins, F.W., *E*-region Thomson scatter *[l]* 19 6370
Perkins, F.W., Auroral instabilities 21 6631
Peselnick, L., P and S velocities in limestone to 12 kb 10 3271
Peselnick, L., 15-kb phase transition in limestone 18 6117
Peter, G., Profile from Kermadec trench to Chile *[l]* 22 7154
Peterman, Z.E., Age of precambrian events, Colorado 6 2277
Peterson, L.R., Energy loss functions 1 233
Peterson, R.W., Neutron monitor yield functions 1 353
Pfitzer, K.A., Inner belt electron addition *[l]* 17 5792
Pharo, M.W. III, Plasmasphere contraction 3 961
Pharo, M.W. III, Thermal exospheric ions 17 5521
Philip, J.R., Unsaturated flow from cylindrical source *[d]* 12 3968
Phinney, R., Lunar theory and processes 12 4115
Phinney, R.A., Radio occultation study of planetary atmospheres 5 1819
Pick, M., Solar proton propagation 5 1555
Pidgeon, V.W., Radar sea return 4 1333
Pilipowskyj, J., Stratospheric aerosol 24 7553
Pitman, W.C., III, Magnetic anomalies in Pacific 6 2069
Pitman, W.C., III, Magnetic anomalies in South Atlantic 6 2087
Pitman, W.C., III, Magnetic anomalies and geomagnetic reversals 6 2119
Pitman, W.C., III, Sea-floor spreading in Gulf of Alaska 20 6571
Plooster, M.N., Shock wave from lightning discharge 10 3121
Pochapsky, T.E., Currents in deep ocean 4 1221
Poetz, J.A., Rare earth abundances 18 6085
Pollack, J.B., Elevation differences on Mars 4 1373
Pollack, J.B., Ice clouds on Venus 18 5943
Pollard, M., Ancient floods *[l]* 22 7158
Pond, S., Buoy motion effects on wind speed and stress 2 507
Porath, H., Magnetism of intergrown maghemite and hematite 18 5959
Porcello, L.J., Transauroral propagation 19 6337
Posey, C.J., Sediment entrainment by turbulent flows *[d]* 14 4778
Potter, R., Inner zone electrons 3 1019

Prasad, S.S., Backscatter study of electron content 7 2477
Prasad, S.S., Ionosphere over Arecibo 21 6795
Prenatt, R.E., Electron concentration profiles *[l]* 3 1114
Press, F., Earth models obtained by Monte Carlo inversion 16 5223
Price, R.D., Night helium glow *[l]* 3 1107
Pruppacher, H.R., Freezing potentials 2 571
Pruppacher, H.R., Collision efficiency of cloud drops 20 6407
Puri, R.K., Primary helium flux *[l]* 13 4393
Pushkar, P., Sr^{87}/Sr^{86} in island arc volcanic rocks 8 2701
Pyle, R., Solar proton propagation 5 1555
Pytkowicz, R.M., Oxygen saturation in surface waters 16 5421

Quaide, W.L., Thickness of lunar surface layer 16 5247

Rabben, H.-H., Auroral electric field 1 21
Radford, W.E., Magnetic intensity at 1100 km 7 2495
Radford, W.E., Geomagnetic harmonic series for 1100 km 7 2505
Raff, A.D., Sea floor spreading 12 3699
Rahman, N.K., Thermal exospheric ions 17 5521
Raleigh, C.B., Mechanisms of plastic deformation of olivine 16 5391
Raleigh, C.B., Deformation of olivine in stony meteorites 16 5439
Ramaty, R., Synchrotron emission 11 3573
Ramsey, T.L., Fluid flow in porous media 24 7685
Rancitelli, L.A., K:Ar in iron meteorites 16 5429
Randall, M.J., Multipolar components in deep earthquakes *[l]* 18 6140
Randhawa, J.S., Ozone measurements during solar eclipse 2 493
Rao, C.S.R., Electrons in magnetotail 23 7339
Rao, G.V., Kinematic generation of baroclinic intensity 16 5039
Rao, M.M., Midlatitude sporadic *E* 1 215
Rao, M.N., Rare gases in chondrites *[l]* 6 2297
Rao, N.N., Electron content by Faraday and Doppler methods 7 2447
Rao, N.N., Electron content *[l]* 19 6373
Rao, P.B., Electrons and ions in the *F* region 5 1661
Rao, P.B., Backscatter study of electron content 7 2477
Rao, S.S., Wave propagation in inhomogeneous plasma 1 415
Rao, U.R., Cosmic-ray anisotropies 13 4159
Rapp, R.H., Earth's gravitational potential 20 6555
Rea, D.G., Composition of Venus clouds 2 665
Rea, D.G., Reradiation and thermal emission from lunar craters 16 5281
Rea, D.G., Roughness and microwave emissivity 22 7009
Rea, D.G., Anomalous cooling of craters 24 7593
Reasoner, D.L., Auroral alpha particles 13 4185
Reasoner, D.L., Auroral alpha particles *[d]* 19 6387
Reber, E.E., Oxygen absorption in lower atmosphere 10 3113
Reddy, B.M., Electron temperature and concentration at 1000 km 5 1607
Reddy, C.A., Midlatitude sporadic *E* 1 215
Reddy, C.A., Blanketing sporadic *E* 5 1641
Reddy, C.A., Sporadic *E* reflections 17 5627
Reed, E.I., Mesospheric ozone 9 2951
Reed, R.J., Transport of tracers in the lower stratosphere 14 4461
Rees, M.H., Nocturnal ionization at Fort Churchill 23 7285
Reid, G.C., Small-scale irregularities in the ionosphere 5 1627
Reidy, W.P., Auroral electrons *[l]* 9 3072
Remo, J.L., Model for tektites of meteoritic origin 12 3727
Rennilson, J.J., Surveyor 3—television observations 12 3989
Reynolds, D.K., Schumann resonances *[l]* 13 4416
Richards, C.N., Acoustic output of a long spark *[l]* 2 815
Richards, M.L., Pacific Ocean seamount 24 7713
Rieger, E., Auroral electric field 1 21
Rikitake, T., Resonant behavior of induced currents 22 7019
Rinehart, J.S., Seismic signatures of Icelandic geysers 14 4609
Rinehart, J.S., Geyser activity 24 7703
Robb, J.D., Pressure pulse from a lightning stroke 6 1883
Roberson, F.I., Surveyor 3—soil mechanics surface sampler 12 4045
Roberts, C.S., Trapped particle acceleration 1 153
Roberts, C.S., Energetic electrons (ATS) 17 5751
Roberts, C.S., Resonant scattering of trapped particles 23 7361
Roberts, J., P—wave anomalies and upper mantle structure 12 3885
Robertson, W.A., Magnetization of Hurley Creek formation 2 697
Robinson, E.S., Seismic waves in polar ice sheet 2 739
Roden, G.I., Analysis of STD records 2 535
Rogers, J.C., Schumann resonances *[l]* 13 4416
Rona, P.A., A magnetic anomaly on continental rise 16 5313
Rosen, A., Inner zone electrons 3 1019
Rosen, J., Dust and ozone 2 479
Rosen, J.M., Vertical distribution of dust *[r]* 9 3088
Rosen, J.M., Transport of material across the tropopause *[l]* 16 5463
Rosenberg, N.W., Ionospheric wind profiles 15 4965
Ross, H.P., Mathematical model for lunar crater erosion 4 1343
Ross, W.J., Electron concentration from Doppler dispersion *[l]* 3 1102
Rostoker, G., Macrostructure of magnetic bays 13 4217
Rostoker, G., Interplanetary magnetic field *[l]* 13 4382
Roy, J.L., Magnetization of Hurley Creek formation 2 697
Roy, R.F., Heat flow in the United States 16 5207
Rudnick, P., Day length at Arctic circle *[d]* 16 5472
Rufenach, C.L., Electron content near magnetic equator 7 2459
Runcorn, S.K., Virtual geomagnetic poles *[l]* 18 6138
Russell, C.T., Search coil magnetometer (ATS) 17 5769
Rutherford, J.A., $O^+(^4S)$ and H(1s) charge transfer 3 1035
Rutherford, J.A., Water ion reactions 21 6751
Ryall, A., Crustal structure and volcanism of upper mantle 14 4561
Ryan, J.A., Adhesion of silicates cleaved in ultrahigh vacuum 18 6061

Saari, J.M., Surveyor 3—lunar thermal characteristics 12 4095
Saari, J.M., Lunar surface temperatures 22 7209
Sabu, D.D., Fission xenon in chondrites 12 3957
Sacks, S., Refraction measurements, SE African margin 12 3707
Sagan, C., Elevation differences on Mars 4 1373
Sagan, C., Ice clouds on Venus 18 5943
Saito, T., Geomagnetic pulsations 1 267
Sakamoto, K., Aluminum 26 in terrestrial rocks 10 3303
Sanders, N.L., Inner zone electrons 3 1019
Sartor, J.D., Charge transfer between drops in electric field 20 6415
Sastry, R.S., Standing waves in *E* region 13 4291
Sastry, T.S.G., Quiet-day electrojet 5 1789
Sato, T., Crustal structure of Philippine Sea 10 3143
Sato, Teruo, *F*2 electron concentration 1 127
Sato, Teruo, Electron concentration variations 19 6225
Sato, Tetsuya, Brillouin scattering in plasmas 9 2941
Sauer, H.H., Nonconjugate PCA's *[l]* 9 3058
Scanlon, J.H., Contamination of lunar surface samples 10 3231
Scarf, F.L., Electromagnetic and electrostatic waves 5 1723
Scarf, F.L., Ion cyclotron whistlers in the solar wind 5 1747
Scarf, F.L., Solar wind anisotropies and instabilities 19 6149
Scarf, F.L., VLF electric field 21 6665
Schaefer, E.J., Atomic nitrogen *[l]* 13 4425
Schiffmacher, E.R., Eclipse ionospheric electron content *[l]* 15 4994
Schimke, G.R., Description of a Pacific Ocean seamount 2 559
Schimke, G.R., Pacific Ocean seamount *[r]* 24 7716
Schlegel, E.K., Electromagnetic cascades 15 5012
Schmidt, F.N., Lunar surface mechanical properties 22 7169
Schneible, D.E., Ionospheric electron concentration measurements 11 3511
Scholz, C.H., Microfracturing and inelastic deformation of rock 4 1417
Scholz, C.H., Fracturing process in brittle rock 4 1447
Scholz, C.H., Mechanism of creep in brittle rock 10 3295
Schreiber, B.C., Sound velocity in deep sea sediments 4 1259
Schreiber, E., Ultrasonic interferometric measurements on obsidian *[l]* 2 824
Schreiber, E., Revised data on polycrystalline magnesium oxide *[l]* 8 2837
Schreiber, E., Elastic constants of hematite 20 6585
Schufle, J.A., Temperature of maximum density of water in capillaries *[l]* 10 3345

Schulz, M., Resonant scattering of trapped particles 23 7361
Schwab, F.A., Apparent initial phase of Rayleigh waves 2 755
Schwartz, K., Distinction between hot and cold moon *[l]* 20 6601
Schwartz, R.J., Onset of wind-driven waves 16 5133
Schwiderski, E.W., Mantle convection, gravity, and tectonics *[l]* 8 2828
Sclater, J.G., Pacific Ocean seamount *[d]* 24 7713
Sclater, J.G., Heat flow inside Pacific island arcs 10 3173
Scott, R.F., Surveyor 3—principal scientific results 12 3983
Scott, R.F., Surveyor 3—soil mechanics surface sampler 12 4045
Scott, R.F., Density of the lunar surface soil *[l]* 16 5469
Scott, R.F., Principal science results from Surveyor 5 22 7165
Scott, R.F., Lunar surface mechanical properties 22 7169
Sellers, B., Electron and proton intensities in magnetic disturbance *[l]* 15 4979
Setiga, T.A., *D*-region CW propagation 21 6783
Sen, A.K., Hydromagnetic instability *[d]* 15 5015
Senn, H.V., Multilevel IEC for weather-radar use 4 1201
Seward, F.D., X-ray airglow in daytime sky *[l]* 22 7149
Shapley, A.H., IUWDS calendar for 1968 *[l]* 1 460
Sharp, G.W., F_2 electron enhancement 19 6275
Sharp, R.D., Auroral electron precipitation 3 969
Sharp, R.D., Photoelectrons 13 4199
Shawhan, S.D., VLF electric and magnetic fields 17 5649
Shea, M.F., Photoelectrons 13 4199
Shelton, R., Inner zone electrons 3 1019
Shen, C.S., Solar modulation of galactic cosmic rays 13 4273
Shimazaki, T., *F*-region concentration variations 23 7399
Shirke, J.S., Lower ionosphere electron concentration 19 6243
Shkarofsky, I.P., Cyclotron harmonic resonances 15 4859
Shoemaker, E.M., Surveyor 3—principal scientific results 12 3983
Shoemaker, E.M., Surveyor 3—television observations 12 3989
Shoemaker, E.M., Lunar theory and processes 12 4115
Shoemaker, E.M., Principal science results from Surveyor 5 22 7165
Shor, G.G.,Jr., Seismic refraction studies 6 2175
Shor, G.G.,Jr., Structure of Hawaiian arch 22 6991
Sidran, M., Contamination of lunar surface samples 10 3231
Sidran, M., Lunar thermoluminescence 16 5195
Siebert, M., Hemispheric magnetic activity *[l]* 9 3049
Sienko, M.J., H irradiation of oxides *[l]* 12 3972
Simmons, G., Electrical conductivity of moon 10 3219
Simmons, G., Heat flow data 20 6608
Simmons, G., Seismic travel-time anomalies 24 7577
Simmons, V.P., Wave 'set-down' and set-up 8 2569
Simpson, D.R., Effect of water on strength of diabase 20 6591
Simpson, E.S.W., Refraction measurements, SE African margin *[r]* 12 3707
Simpson, J.A., Neutral sheet electrons 3 891
Simpson, J.A., Solar proton propagation 5 1555
Singer, S., Magnetotail electron bursts 19 6189
Singer, S., Electrons in magnetotail 23 7339
Singer, S.F., Precipitation over the ocean *[l]* 10 3324
Singer, S.F., Precipitation over ocean *[r]* 22 7146
Singh, R., Unsaturated flow from cylindrical source *[r]* 12 3971
Singleton, D.G., Morphdogy of spread—*F* occurence 1 295
Sirounian, V., Microwave emission of water 14 4481
Siscoe, G.L., Interplanetary magnetic field 1 61
Siscoe, G.L., Dessler-Parker-Sckopke relation *[l]* 3 1115
Siscoe, G.L., Pioneer 7 magnetosphere observations 7 2399
Siscoe, G.L., Geomagnetic sudden impulses 15 4869
Skalafuris, A.J., Model for tektites of meteoritic origin 12 3727
Skillman, T.L., Sudden commencement in magnetotail 21 6699
Smith, A.R., Radiogeologic studies in Sierra Nevada batholith 4 1481
Smith, D.R., Solar proton propagation 5 1555
Smith, E.J., Interplanetary magnetic field 1 61
Smith, E.J., Search coil magnetometer (ATS) 17 5769
Smith, F.L.,III, *F*-region electrons 23 7385
Smith, J.W., Lunar surface temperatures 22 7209
Smith, L.B., Thermospheric winds 15 4959
Smith, L.G., Molecular oxygen concentrations 15 4835
Smith, L.L., Night airglow variations *[l]* 7 2531
Smith, O.E., High-altitude winds 15 4969
Smith, R.L., Magnetospheric properties from ducted and nonducted whistlers 1 1
Smith, R.L., Continental shelf waves off Oregon 2 549
Smith, T.E., Aeromagnetic measurements of basin-range structure 4 1321
Smith, T.J., Crustal structure of the Middle Atlantic states 6 1983
Smylie, D.E., Elastic wave motion and nonuniform magnetic field 20 6527
Smylie, D.E., Earthquakes and motion of rotation pole 24 7661
Soga, N., Ultrasonic interferometric measurements on obsidian *[l]* 2 824
Soga, N., Isotropic sound velocities of alpha quartz *[l]* 2 827
Soga, N., Elastic properties of CaO 16 5385
Sonnerup, B.U.Ö., Magnetopause current layer 5 1757
Sonett, C.P., Geomagnetic tail 3 943
Sonett, C.P., Ambiguous data from fluxgate magnetometer *[r]* 9 3081
Sonett, C.P., Distinction between hot and cold moon *[l]* 20 6601
Sonett, C.P., Geomagnetic tail gradient *[l]* 21 6837
Sorenson, W.R., Ionospheric heating by hydromagnetic waves 1 287
Sparrow, J.G., Airglow observations from OSO—B2 satellite 3 857
Speiser, T.W., Particle motion in neutral sheet *[l]* 3 1112
Spencer, R.L., Surveyor 3-lunar surface mechanical properties 12 4081
Spencer, R.L., Lunar surface mechanical properties 22 7169
Sperling, F.B., Surveyor 3-lunar surface mechanical properties 12 4081
Spetzler, H., Velocity and attenuation in a binary system 18 6051
Spreiter, J.R., Shock temperature jumps *[l]* 5 1851
Springer, D., Decoupling of seismic waves by cavity 18 5995
Staley, D.O., Enhancement of lunar hot spots during eclipse 6 2049
Stanley, G., Anomalous *D*-region reflection *[l]* 13 4430
Stauder, W., Rat Island earthquake mechanisms 12 3847
Stauder, W., Earthquake foci beneath Aleutian trench 24 7693
Stebbings, R.F., $O^+(^4S)$ and H(1s) charge transfer 3 1035
Steiger, W.R., Night airglow variations *[l]* 7 2531
Steinbacher, R.H., Introduction: Surveyor 5 science results 22 7161
Steinberg, G.S., Baldwin's relation for lunar craters *[l]* 18 6125
Steinberger, E.H., Freezing potentials 2 571
Steinbock, M., Microburst phenomena, 1 7 2333
Steinhart, J.S., Crustal structure of the Middle Atlantic states 6 1983
Stephens, D.R., Triaxial compression data on granodiorite 4 1305
Stern, D., Euler potentials and geomagnetic drift shells 13 4373
Stevenson, T.E., Particles in field gradients 1 175
Stocker, J., Auroral electric field 1 21
Stoddart, J.W., Airglow observations from OSO—B2 satellite 3 857
Stoffregen, W., Auroral electric field 1 21
Stommel, H., Thermocline near Bermuda 18 5849
Stover, C.W., Seismicity of South Atlantic Ocean 12 3807
Strangway, D., Electrical conductivity of moon 10 3219
Strangway, D.W., Magnetic stability in volcanic rocks 12 3787
Strangway, D.W., Magnetic paleointensity 22 7031
Stromberg, H.D., Triaxial compression data on granodiorite 4 1305
Strong, I.B., Interplanetary shock waves 1 43
Strong, I.B., Earth's bow shock 1 51
Strong, I.B., Solar wind and magnetosheath (ATS) 17 5761
Strong, I.B., Outward flow of protons *[l]* 17 5777
Stubbs, H.E., Confinement of magnetic field by ions *[d]* 7 2539
Sudo, K., Partial derivatives of free oscillation period 12 3801
Sugiura, M., Sudden commencement in magnetotail 21 6699

Summers, A.L., Shock temperature jumps *[l]* 5 1851
Sun, J.M.S., Cometary impact origin of Copernicus 8 2721
Surprenant, N.F., Volcanic clouds 16 5235
Sutherland, A.J., Sediment entrainment by turbulent flows *[r]* 14 4779
Sutherland, A.J., Overshoot effect in waves 22 6879
Sutton, G.H., Surveyor 3-principal scientific results 12 3983
Sutton, G.H., Surveyor 3-lunar surface mechanical properties 12 4081
Sutton, G.H., Principal science results from Surveyor 5 22 7165
Sutton, G.H., Lunar surface mechanical properties 22 7169

Swanson, M.F., Frequency distribution of meteorite-earth collisions 20 6503
Swift, D.W., Neutral hydrogen hypothesis *[l]* 5 1847
Swift, D.W., VLF chorus 23 7447
Swift, D.W., Electrostatic wave acceleration *[l]* 23 7524
Swisher, R.L., Inner zone low-energy fluxes *[l]* 1 442
Swisher, R.L., Proton lifetime 17 5665
Sykes, L.R., Phase changes as a cause of deep earthquakes *[r]* 4 1508
Sykes, L.R., Seismicity-tectonics of NE Pacific 12 3821
Sykes, L.R., Seismology and new global tectonics 18 5855
Syono, Y., Melting of peridotite 18 6023

Takagi, J., Aluminun 26 in terrestrial rocks 10 3303
Takahashi, T., Isothermal compression of Fe-Ni alloys to 300 kb 14 4717
Takeuchi, H., Surface waves and existence of magma pockets *[l]* 10 3349
Takeuchi, H., Partial derivatives of free oscillation period 12 3801
Tamrazyan, G.P., Earthquakes of Nevada and tides 18 6013
Tanaka, S., Aluminum 26 in terrestrial rocks 10 3303
Tanner, C.B., Evaporation from unsaturated surfaces 4 1299
Taylor, H.A.,Jr., Plasmasphere contraction 3 961
Taylor, H.A.,Jr., Thermal exospheric ions 17 5521
Taylor, H.E., Lunar magnetic wake 11 3421
Taylor, H.E., Adiabatic motion of auroral particles *[r]* 17 5807
Taylor, H.E., Lunar wake magnetic field 21 6723
Taylor, W.W.L., VLF morphology 17 5615
Teng, T-L., Body waves and *Q* structure of the mantle 6 2195
Tjonaman, R.L., Neutron monitor yield functions 1 353
Tidman, D.A., Plasma waves from earth's bow shock 5 1543
Tilford, S.G., Night airglow O I intensity profiles 17 5535
Tinsley, B.A., Geocoronal Balmer alpha 13 4139
Tipple, K.R., Ionospheric electron concentration measurements 11 3511
Titheridge, J.E., Periodic ionospheric disturbances 1 243
Titheridge, J.E., Nighttime ionospheric electron content 9 2985
Thein, M., Radiocerium concentrations in ground-level air 10 3129
Theon, J.S., Observations of the mesosphere 14 4475
Thielheim, K.O., Electromagnetic cascades 15 5012
Thomas, J.O., Polar exosphere 23 7407
Thompson, G., Mid-Atlantic ridge volcanism and metamorphism 18 5925
Thompson, G.A., Strain and strain energy 18 5981
Thompson, M.C.,Jr., Space averages of air and water vapor densities 10 3097
Thompson, M.C.,Jr., Refractive index microstructure 20 6425
Thome, G., Waves in polar ionosphere 19 6319
Thomson, K.C., Wide-band transducer for seismic modeling 14 4735
Thorp, W.H., Velocity and temperature profiles in Lake Superior *[l]* 18 6122
Thorne, R.M., Electron energy spectrum 15 4895
Tlapa, G.A., Water wave theory 14 4555
Tobin, D.G., Seismicity-tectonics of NE Pacific 12 3821
Tozer, D.C., Geothermal heat flow pattern *[l]* 8 2834
Tryggvason, E., Surface deformation in Iceland 22 7039
Tsuchimoto, M., Aluminum 26 in terrestrial rocks 10 3303
Tucker, A.J., Accuracy of satellite Doppler data 1 385
Tucker, A.J., Ionospheric analysis 13 4325
Turcotte, D.L., Geotherm distribution during mantle convection 8 2643
Turkevich, A.L., Surveyor 3-principal scientific results 12 3983
Turkevich, A.L., Principal science results from Surveyor 5 22 7165
Turner, B.R., Water ion reactions 21 6751
Tyler, G.L., Radar reflectivity of lunar surface 24 7609

Ulwick, J.C., Auroral electrons *[l]* 9 3072
Uman, M.A., Lightning interstroke time interval 2 497
Uman, M.A., Acoustic output of a long spark *[l]* 2 815
Uman, M.A., Power and energy dissipation in lightning *[l]* 10 3335
Uman, M.A., Pressure pulse from a lightning stroke *[l]* 20 6595
Untersteiner, N., Natural desalination of sea ice 4 1251
Unti, T., Two-dimensional Chapman-Ferraro problem 23 7319
Unz, H., Wave propagation in inhomogeneous plasma 1 415
Urban, E., Inner zone electrons 3 1019

Vaisnys, J.R., Propagation of *P* waves through phase transformations 24 7675
Vali, V., Strains across Kern River fault *[l]* 18 6143
Van Allen, J.A., Cosmic-ray diffusion 1 163
Van Allen, J.A., Particle radiation near Venus *[l]* 1 421
Van Allen, J.A., Solar X-ray flare *[l]* 21 6863
van Andel, T.H., Mid-Atlantic ridge at 22 degrees N 4 1279
van Andel, T.H., Mid-Atlantic ridge volcanism and metamorphism 18 5925
Vancour, R.P., Electron and proton intensities in magnetic disturbance *[l]* 15 4979
van de Lindt, W.J., Movement of M discontinuity *[r]* 20 6607
Vanderslice, J.T., Night airglow O I intensity profiles 17 5535
Vasyliunas, V.M., Bow shock compression *[l]* 1 429
Vasyliunas, V.M., Dessler-Parker-Sckopke relation *[l]* 3 1115
Vasyliunas, V.M., Magnetospheric electric field *[l]* 7 2529
Vasyliunas, V.M., Low-energy electrons in magnetosphere *[r]* 9 2839
Vasyliunas, V.M., Adiabatic motion of auroral particles *[d]* 17 5805
Vasyliunas, V.M., Dayside electrons *[l]* 23 7519
Venkatesan, D., Microburst phenomena, 1 7 2333
Venkatesan, D., Microburst phenomena, 2 7 2345
Verma, R.K., Paleomagnetism of Kamthi sandstones from India 2 703
Verzariu, P., Magnetic intensity at 1100 km 7 2495
Verzariu, P., Geomagnetic harmonic series for 1100 km 7 2505
Vey, E., Lunar soil 12 3747
Vincent, R.K., Infrared emission from mat surfaces 18 6039
Vincenz, S.A., Partial self-reversal in Keweenawan rocks 8 2729
Vincenz, S.A., Partial self-reversal in Keweenawan rocks 8 2753
Virobik, P.F., VLF electric field 21 6665
Vitkus, G., Surveyor 3-lunar thermal characteristics 12 4095
Vitkus, G., Lunar surface temperatures 22 7209
Volland, H., Magnetospheric temperature distribution 15 4851
Vonnegut, B., Water drops in electric field *[d]* 4 1501
von Zahn, U., Neutral constituents of thermosphere 3 1071
Vortman, L.J., Scaling from surface explosion craters 14 4621
Voshall, R.E., Lightning interstroke time interval 2 497
Vrebalovich, T., Surveyor 3: introduction 12 3981

Waddington, C.J., Primary cosmic radiation 13 4261
Wagner, C.A., Resonant gravity harmonics from 12-hour satellites 14 4661
Wagner, C.A., Longitude harmonics of gravity 24 7651
Wait, J.R., VLF mode conversion *[r]* 11 3537
Wait, J.R., Earth-ionosphere cavity 13 4335
Wait, J.R., VLF mode conversion *[l]* 17 5801
Walker, C.T., Phase changes as a cause of deep earthquakes *[d]* 4 1506
Walker, J.C.G., Nocturnal ionization at Fort Churchill 23 7285
Wallace, L., Lyman alpha near Venus *[l]* 7 2541
Wallace, L., Oxygen dayglow 15 4813
Walsh, J.B., Strike-slip with friction 2 761
Walsh, J.B., Attenuation in partially melted material 6 2209
Walsh, J.B., Permeability of granite under high pressure 6 2225
Walt, M., Electron diffusion 3 1013
Walt, M., Radial electron diffusion 23 7231
Walter, F., Alouette VLF at the plasmapause 9 2929
Walters, M., Atomic nitrogen *[l]* 13 4425
Wand, R.H., *E*-region Thomson scatter *[l]* 19 6370
Wang, C., Phase transitions in calcite 12 3937
Wang, C., Constitution of the lower mantle 20 6459
Wang, J.R., Neutron monitor yield functions 1 353
Wang, J.T., Surveyor 3-lunar thermal characteristics 12 4095
Wang, T.L., Freezing potentials 2 571
Ward, S.H., Electromagnetic reflection from lunar model 4 1355
Ward, S.H., Studies of magnetospheric substorm, 2 5 1697
Ward, S.H., Magnetotelluric impedance 8 2769
Warnock, J.M., Molecular oxygen *[l]* 17 5798
Warren, C.S., South Atlantic anomaly 11 3477
Warren, C.S., Plasma flow at magnetopause (ATS) 17 5719

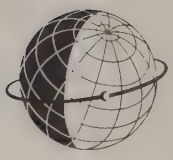
Wasson, J.T., Metal concentration in Arizona octahedrites 10 3207
Waterman, L.S., Carbon dioxide in surface ocean waters, 3 14 4529
Watkins, N.D., Age of cobb seamount *[l]* 12 3977
Wax, R.L., Alpha particles in auroral fluxes *[d]* 13 4452
Webb, W.L., Source of atmospheric electrification 16 5661
Webber, W.R., Cosmic-ray spectra and modulations 13 4231
Webber, W.R., Electron diurnal variation 15 4905
Weeks, L.H., Molecular oxygen concentrations 15 4835
Weertman, J., Temperature profiles, Camp Century borehole 8 2691
Weihrauch, J.H., Cosmic-dust collection 16 5029
Weinman, J.A., Stratospheric aerosol 24 7553
Weinstein, M.S., Acoustic and seismic signals generated by under explosions *[l]* 16 5473
Weinstock, J., Magnitudes of ionospheric irregularities 1 225
Weir, R.A., Auroral microbursts *[l]* 9 3042
Welch, W.J., Reradiation and thermal emission from lunar craters 16 5281
Welch, W.J., Anomalous cooling of craters 24 7593
Weller, G., Heat transfer through sea ice 4 1209
Wendt, I., Two-error regression treatment 18 6071
Werner, E.W., Ocean bottom reflections 12 3905
Westcott, M.F., Magnetic properties of ilmenite particles 4 1269
Wetherill, G.W., Apollo asteroids as sources of meteorites 2 635
Wetherill, G.W., Age of hypersthene (L) chondrites 22 7133
Whalen, B.A., Auroral alpha particles 7 2307
Whalen, B.A., Auroral alpha particles *[r]* 19 6388
Whang, Y.C., Lunar magnetic wake 11 3421
Whitaker, E.A., Surveyor 3-television observations 12 3989
White, R.K., Solar modulation of galactic cosmic rays 13 4273
Wilcox, J.M., Geomagnetic asymmetry *[l]* 21 6835
Wilhelm, K., Pc 1 pulsations 23 7491
Wilkerson, T.D., Plasma observations 21 6809
Wilkins, E.M., Energy of atmospheric eddies in wake of islands 6 1877
Wilkins, E.M., Vortex-stabilized electrical discharges 8 2559
Wilkins, E.M., Atmospheric carbon dioxide at 500 and 700 mb 14 4511
Williams, D.J., Trapped electrons 17 5673
Williams, G.F.,Jr., Precipitation over the ocean *[l]* 10 3324
Williams, G.F.,Jr., Precipitation over the ocean *[r]* 22 7146
Williams, J.G., Apollo asteroids as sources of meteorites 2 635
Williams, R.B., Water temperature in open ocean 22 7127
Williston, S.H., Mercury in the atmosphere 22 7051
Willman, J.F., Accuracy of satellite Doppler data 1 385
Wilshire, H.G., Chemical composition of lunar surface 24 7621
Wilson, C.R., *Pg* micropulsations at conjugate points 5 1805
Wilson, C.R., Pc 1 fine structure *[l]* 9 3063
Wilson, M.D., High-latitude electron boundary 23 7237
Wilson, W.H., P and S velocities in limestone to 12 kb 10 3271
Winckler, J.R., Magnetopause electrons (ATS) 17 5733
Winckler, J.R., Substorm electron acceleration *[l]* 17 5786
Winckler, J.R., Inner belt electron addition 17 5792
Winge, C.R.,Jr., Charged particles in a spiral field 1 165
Wolf, R.A., Solar-wind flow behind moon 13 4281
Wolf, R.A., Magnetopause transfer processes 17 5561
Wollenberg, H.A., Radiogeologic studies in Sierra Nevada batholith 4 1481
Wombwell, E., Magnetotelluric impedance 8 2769
Woodrum, A., Atmospheric tides at 90 to 120 km 2 467
Woodrum, A., 100-km winds *[l]* 23 7535
Wright, F.W., Extraterrestrial origin of particles 24 7589
Wright, J.A., Thermal conductivity in presence of transverse anisotropy *[l]* 16 5477
Wright, R.W., Stratospheric aerosol 24 7553
Wright, T.L., March 1965 eruption of Kilauea volcano 10 3181
Wyss, M., Seismic moment, stress, and source dimensions *[r]* 14 4681

Yaskawa, K., Partial self-reversal in Keweenawan rocks 8 2753
Yeh, K.C., Electron content by Faraday and Doppler methods 7 2447
Yeh, W. W., Horizontal flow in soils 16 5151
Yngvesson, K.O., Photoelectrons in the ionosphere 1 97
Yoh, P., Lower magnetosphere electron concentration 1 253
Yoshida, S., Ring current effects 11 3377
Yoshii, T., Crustal structure of Philippine Sea 10 3143
Yoshikawa, K., Fallout particles in ground-level air 12 3637
Young, J.A., Radiocarbon from nuclear weapons tests 4 1185
Yu, K., Particle diffusion 5 1829
Yung, T.J., OGO 2 proton gyrofrequency emission *[l]* 11 3592

Zander, R., Reflectivity of ice clouds 20 6381
Zijderveld, J.D.A., Remanent magnetization of Antarctic intrusives 12 3773
Zillman, J.W., Sea to air heat fluxes 22 7057
Zimmerman, S.P., Energy balance of turbulence *[d]* 1 452
Zmuda, A.J., Magnetic intensity at 1100 km 7 2495
Zmuda, A.J., Geomagnetic harmonic series for 1100 km 7 2505

GEOPHYSICAL MONOGRAPH SERIES

published by AGU



The Geophysical Monograph Series, supported in part by a grant from the Charles F. Kettering Foundation, provides a medium for more extended treatment of geophysical subjects than the periodical literature generally allows. The following volumes are still available:

2. GEOPHYSICS AND THE IGY • 1958 • Edited by Hugh Odishaw and Stanley Ruttenberg, this volume contains papers grouped under the headings Upper Atmosphere Physics, the Lower Atmosphere and the Earth, and the Polar Regions. (210 pp.) $8.00

7. ANTARCTIC RESEARCH: MAURY MEMORIAL SYMPOSIUM • 1962 • Based on papers presented at the Tenth Pacific Science Congress held in Honolulu in 1961 and edited by Harry Wexler, Morton J. Rubin, and James E. Caskey, this volume includes studies in Geography, Solid Earth, and Upper Atmosphere, as well as Meteorology, Oceanography, and Glaciology. (228 pp.) $10.00

9. GRAVITY ANOMALIES: UNSURVEYED AREAS • 1966 • Edited by Hyman Orlin and dedicated to Weikko A. Heiskanen, who arranged for the symposium on which the text is based, this volume contains important studies on the gravity field and its applications in determining the shape of the Earth. (142 pp.) $7.00

10. THE EARTH BENEATH THE CONTINENTS • 1966 • This volume contains 43 papers with subject and author index and is concerned with the structure of the solid Earth and related topics. Dedicated to Merle A. Tuve, it is edited by John S. Steinhart and T. Jefferson Smith. (663 pp.) $16.50

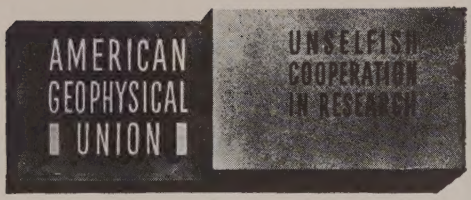
11. ISOTOPE TECHNIQUES IN THE HYDROLOGIC CYCLE • 1967 • Based on a symposium held at the University of Illinois in 1965 and edited by Glenn E. Stout, this monograph is divided into four sections: Measurement Techniques, Isotopes in Hydrometeorology, Isotope Applications in Terrestrial Waters, and General Isotope papers. (199 pp.) $10.00

12. THE CRUST AND UPPER MANTLE OF THE PACIFIC AREA • 1968 • This lengthy monograph, edited by Leon Knopoff, Pembroke J. Hart, and Charles L. Drake, contains a collection of papers selected from the symposium on the Upper Mantle and from other geophysics sessions of the Eleventh Pacific Science Congress. It includes a variety of geophysical and geochemical studies of the Pacific area as well as papers on general geophysical problems. (522 pp.) $24.00

13. THE EARTH'S CRUST AND UPPER MANTLE • 1969 • This volume, prepared under the auspices of the International Upper Mantle Committee, will contain 84 papers on a wide variety of geophysical subjects. Under the general editorship of Pembroke J. Hart and V. V. Beloussov, this comprehensive collection is representative of the many exciting developments that have recently taken place in the study of the earth's interior and the relation of its structure and processes to geological phenomena. New light is shed on the question of large-scale upper mantle motions, including the theories of sea-floor spreading and their relation to continental drift, tectonics, seismicity and many more geological and geophysical questions.
Total pages and price to be announced.
Scheduled for release in Spring of 1969.

20% discount to AGU members

AMERICAN GEOPHYSICAL UNION
Suite 435, 2100 Pennsylvania Ave., N.W.
Washington, D.C. 20037



(Continued from previous page)

Those eligible as candidates for election to the grade of ASSOCIATE MEMBER shall be:

Associate Member — Persons who have an active interest in physical processes of the Earth or technical assistance in the application of geophysics. In general, the minimum qualification for associate membership will be acceptable training or experience in some field of geophysics or allied science.

Those eligible as candidates for election to the grade of STUDENT MEMBER shall be:

Student Member — Persons who are graduate or undergraduate students in residence at least half-time and who are specializing in the geophysical sciences. Teaching or research assistants enrolled in more than half of a full-time academic program shall also be eligible for Student Membership. Student Members shall have all the privileges of Members except that they shall not vote or hold office. In order to eliminate additional paperwork, checks must accompany applications.

Supporting Member — Corporations and other interested organizations shall be eligible as candidates for election to SUPPORTING MEMBERSHIP (four classifications). Each shall have the privilege of designating a representative who has all the rights and privileges of a Member.

CUT ALONG THIS LINE

12. Publications. All members will receive the quarterly **Transactions** for their dues payment as well as two other journals to be chosen in accordance with the options outlined below (check only one box). This option is not subject to change for publications issued during a calendar year and is to continue in effect for subsequent years unless notification is received otherwise by December 1 of the year preceding the year for which the change is to be effective. If publications in addition to those included under membership are desired, a member may subscribe to these.

- ☐ Both issues of **JGR**
- ☐ First monthly issue of **JGR** (aeronomy and space sciences) and **Reviews of Geophysics**
- ☐ First monthly issue of **JGR** (aeronomy and space sciences) and **Water Resources Research**
- ☐ Second monthly issue of **JGR** (solid and fluid Earth, including meteorology) and **Reviews of Geophysics**
- ☐ Second monthly issue of **JGR** (solid and fluid Earth, including meteorology) and **Water Resources Research**

Applicants for student membership may omit Questions 13, 14, and 15, but must fill in Question 16. Applicants for Member or Associate Member must fill in Questions 13, 14 and 15.

13. References: Please list names and addresses of two or three references; include if possible members of AGU, or other technological or professional colleagues who know you well.

14. Titles of technical contributions or publications, particularly those in the geophysical sciences, and where published.

15. Brief statement of any special interests or qualifications in the geophysical sciences.

16. (STUDENT MEMBERS ONLY) The applicant is known to me and is a student majoring in _____ (Subject)

at _____ (Name of College or University) expected to graduate in _____ (Year) with the degree of _____

He is ☐ a full-time student, or ☐ a teaching or research assistant enrolled in more than half of a full-time academic program.

_____
Signature of Faculty Sponsor

_____
Typed or Printed Name of Sponsor

_____
Title

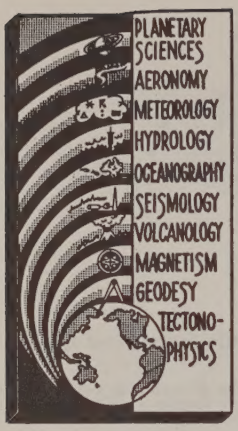
☐ Check here if faculty sponsor is a member of AGU.

☐ Check here if faculty sponsor would be willing to sponsor this applicant for Associate Membership at the termination of his student status.

17. I certify that the information I have furnished above is complete and accurate.

Date _____ Signature _____

Please return form with payment payable to American Geophysical Union, 2100 Pennsylvania Avenue, N.W., Washington, D. C. 20037.



AMERICAN GEOPHYSICAL UNION

SUITE 435, 2100 PENNSYLVANIA AVENUE, N.W., WASHINGTON, D. C. 20037, U.S.A.

Established by the National Research Council in 1919 for the development of the science of geophysics through scientific publication and the advancement of professional and scientific ideals.

Please refer to attached information before proceeding. All items must be answered or the words, "not applicable" or "none" inserted. Incomplete applications may be returned to the sender thus causing a delay in processing the application. Please type or print.

Applications for Supporting Membership are Available Upon Request.

QUALIFICATIONS FOR MEMBERSHIP IN THE AMERICAN GEOPHYSICAL UNION

The membership of the AGU shall consist of Members, Associate Members, Student Members, and Supporting Members (four grades).

Those eligible as candidates for election to the grade of MEMBER shall be:

Member (a) Persons who have made an active contribution to geophysical research through observation, analysis, publication, teaching, or administration. Definite evidence should be presented to the Membership Committee. "Publication" may include books, articles, unpublished manuscripts, inventions, or development of geophysical instruments.

(b) Persons who have made active practical application of geophysical research. It should be shown that the nominee's work has not been purely routine, but that it has tended to create new knowledge of, or to broaden or strengthen the application of, geophysical research. In general, the minimum qualifications for membership will be not less than three years of professional experience in some phase of geophysics.

(Continued on next page)

CUT ALONG THIS LINE

APPLICATION FOR MEMBERSHIP

Please refer to qualifications and designate type of membership desired:

1968 ☐ Member ($16) ☐ Associate ($16) ☐ Student ($10) ☐
1969 ☐ Member ($20) ☐ Associate ($20) ☐ Student ($13) ☐
Life Membership Available. Please Inquire.

Answer all questions, using additional sheets as necessary

1. Dr. / Prof. / Mr. / Mrs. / Miss — Last Name _____ First Name _____ Middle Name _____
2. Preferred Mailing Address for Publications _____
3. Permanent Address _____
4. Place and Date of Birth _____ 5. Country of Citizenship/Naturalization _____
6. Present Position _____ Organization _____
   Address _____
7. Check Section or Sections with which affiliation is desired, and underscore first choice:

☐ Geodesy
☐ Seismology
☐ Meteorology
☐ Geomagnetism and Paleomagnetism
☐ Oceanography
☐ Volcanology, Geochemistry, and Petrology
☐ Hydrology
☐ Tectonophysics
☐ Planetology
☐ Solar-Terrestrial Relationships

EDUCATION

8. Name and Address of School	Dates Attended	Major	Degree and Year Conferred

EXPERIENCE (List beginning with present position)

9. Dates From	To	Name and Address of Organization	Titles, duties, nature of work

10. Function—do not indicate more than three.

☐ A. Consultant
☐ B. Self-Employed
☐ C. Teaching
☐ D. Basic Research
☐ E. Applied Research
☐ F. Engineering
☐ G. Administration-R/D
☐ H. Administration-NON R/D
☐ I. Field Exploration
☐ J. Retired

11. Employment—Indicate one of the following.

☐ A. Military-Active
☐ B. DOD-Civilian
☐ C. Federal Government
☐ D. State Government
☐ E. Local Government
☐ F. Other Government
☐ G. University
☐ H. Non-Profit
☐ I. Industry
☐ J. Business

(over)